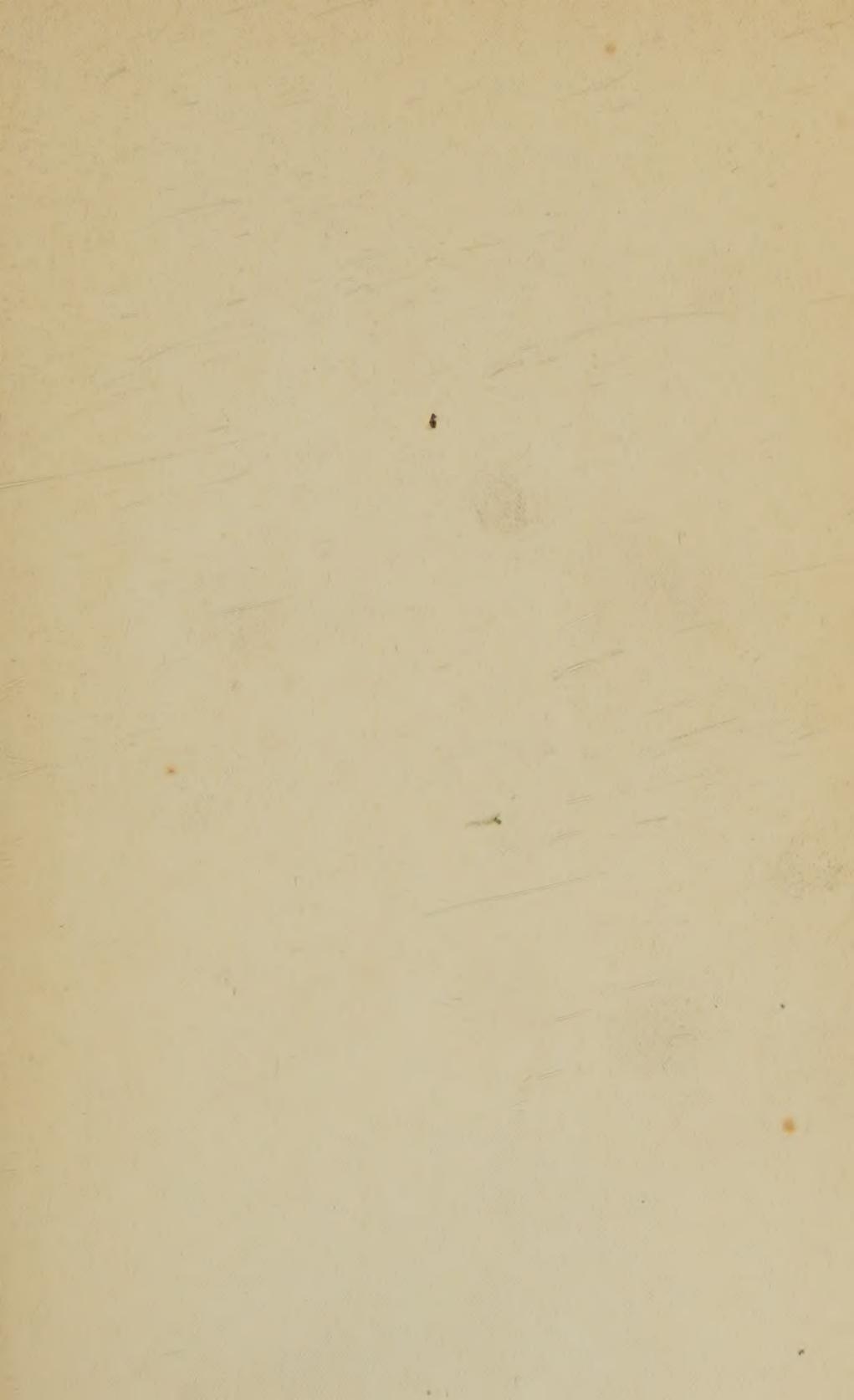
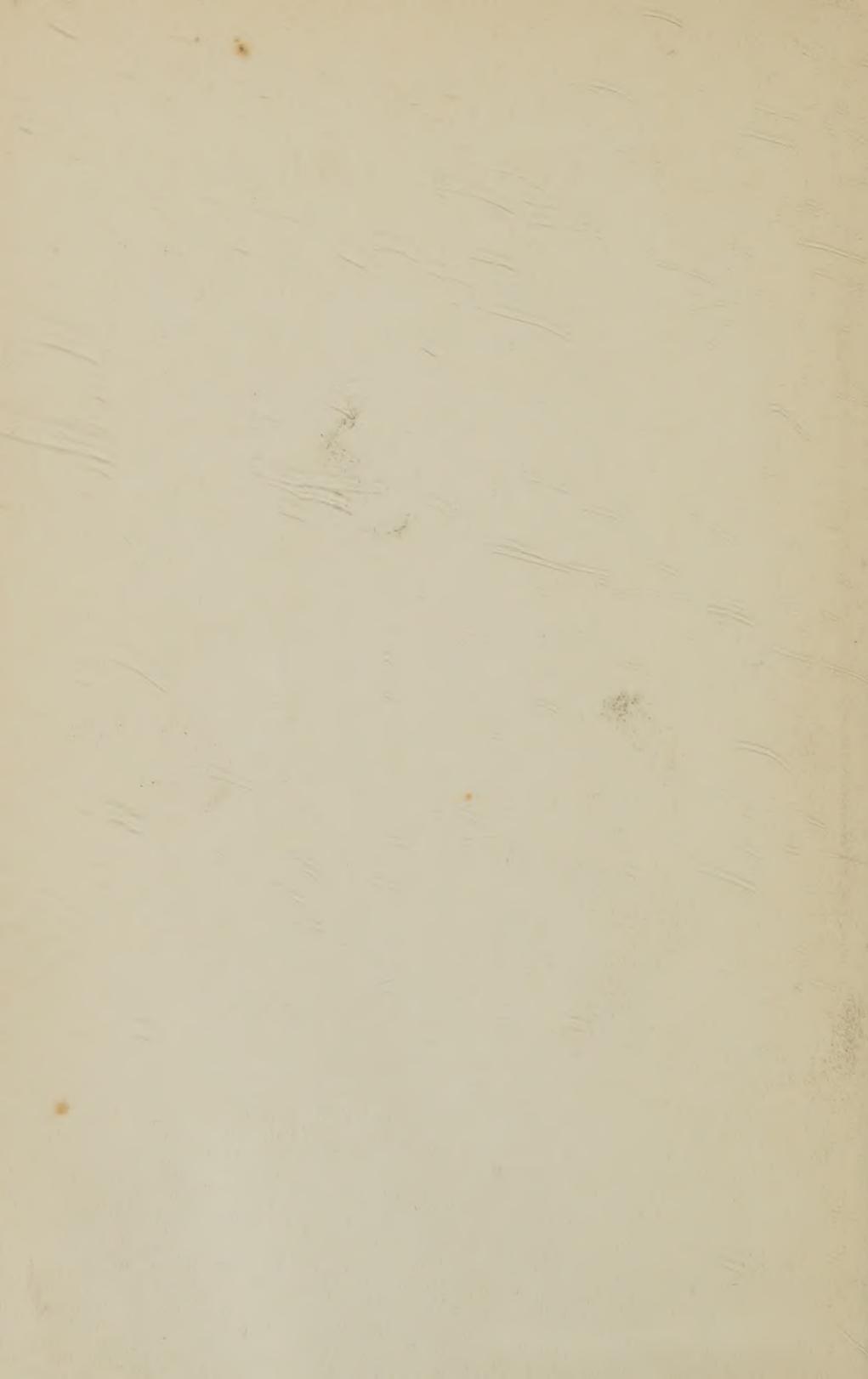


THE CURE *of*
ALCOHOLISM
AUSTIN O'MALLEY





C THE CURE OF ALCOHOLISM

BY

AUSTIN O'MALLEY, M.D., PH.D., LL.D.

"If weakness may excuse,
What murderer, what traitor, parricide,
Incestuous, sacrilegious, but may plead it?
All wickedness is weakness; that plea, therefore,
With God or man will gain thee no remission."

MILTON. *Samson Agonistes.*



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PREFACE

The reason for the existence of this book is to call attention to the fact that the efforts commonly made in opposition to alcoholism are too specialized: they try to plant sobriety in a soil not fitted for it. Sobriety is only a part of temperance, and temperance itself is but one indivisible phase of that spiritual unity called the cardinal virtues. The drunkard must aim at the acquisition in the natural order of all the cardinal virtues, or their reception in the supernatural order, since he is lacking in each of these almost as much as he fails in temperance, and temperance will never come to any one unaccompanied by the other virtues. When the drunkard, striving toward a new life, acquires these virtues, sobriety is added as a matter of course.

Again, it is impossible, short of a miracle of grace, to cure a drunkard whilst the physical effects of the drug he is taking are present, therefore before applying moral treatment, physical elimination of the poison must be accomplished. The first five chapters explain

PREFACE

the physical side of alcoholism and the medical treatment, and the last five the moral treatment. The book is meant for medical, clerical, and lay readers, hence the medical treatment most successful at present is explained, since it has not yet been published in books. The pathology of alcoholism is given only in outline as that is intended for the reader who is not a physician, and as a deterrent: physicians will find the technical details in medical treatises.

The explanation in Chapter VII of the morality of general anæsthesia differs in its physical data from the statements made by moral theologians. The cure of morphinism, cocaineism, and similar drug-addictions is, medically and morally, the same as that of alcoholism, therefore an appendix concerning these vices is added.

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THE CURE OF ALCOHOLISM

CHAPTER I

THE PHYSIOLOGY AND PATHOLOGY OF ALCOHOLISM

In a person given up to chronic alcoholism all physical organs and tissues, and every spiritual faculty, show symptoms of absolute or relative deterioration. He has physiological and extramental faculties, as sensation, imagination, and the conservation of sensible experience; he has intellectual cognition, and spiritual memory; and in appetitive, or conative, activity he has sensuous desires and organic appetite, spiritual desires and volition, intellect, memory, and will. All these undergo degenerative changes as effects of his physico-moral disease. As the disease is both physical and moral its treatment is physical and moral; therefore in the first part of this study of alcoholism the physical lesions caused thereby, and the medical treatment of the drunkard, which is an essential preparation for the moral

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treatment, are considered; in the second part of the treatise the method for attempting a cure of the moral degeneracy incident to chronic alcoholism is developed.

In the production of the physical symptoms grouped under the title Alcoholism the chief intoxicants are ethylic and methylic alcohols. Propyl, butyl, and amyl alcohols, and certain aldehydes also have influence, but ethylic alcohol is the most important toxic agent.

Methylic, or wood, alcohol (called also Columbian, Colonial, Union, Eagle, and Green-Wood Spirit) is used to adulterate cheap whiskey. The characteristic odor of the "dive," and sometimes of the breath of the common sot is like that of methylic alcohol, but it is usually from amylic alcohol in cheap new whiskey. E. Harnack¹ found that methyl alcohol in itself is not very toxic, not nearly so much as the other alcohols that contain more carbon, but it becomes very toxic in the body tissues by gradual oxidation into formic acid. Methyl alcohol selects the nervous elements, and the oxidation affects especially the nervous system.

This alcohol is then, in its final results very poisonous; and more so to some individuals than to others—two teaspoonfuls have caused

¹ *Deutsche medizinische Wochenschrift.* Berlin. Vol. 38, n. 8.

full and permanent blindness. In one series of 275 cases of methylic alcohol poisoning there were 122 deaths, and 153 instances of complete and incurable blindness.¹ In New York City, in the winter of 1904-1905, there were 25 known deaths from methylic alcohol used in cheap whiskey. In all poisoning by this drug there is a fatty degeneration of the liver.

Propyl, butyl, and amyl alcohols, and an aldehyde, furfurol, in combination make fusel oil. In England amylic alcohol is sometimes called fusel oil. This oil may be present in new whiskey and cause evil effects, but the group of alcohols in old whiskey are oxidized into various flavors.

Ethylic alcohol, as has been said, is the chief cause of the group of symptoms called alcoholism. The distilled liquors, whiskey, brandy, gin, rum, contain from about 25 to 80 per cent. alcohol; fortified wines, like Sherry, Madeira, and Port, from 15 to 22 per cent.; champagne and clarets, about 9 per cent.; Rhine wines, 7 to 12 per cent.; malt liquors, from 5 to 8 per cent.; and beer, 2.5 to 5 per cent.

The table compiled for the Committee of Fifty, and published in their report on "The

¹ Osler. *Modern Medicine*. Philadelphia, 1907, vol. i, p. 161.

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Liquor Problem" is as follows, with variants added in the last column from Wood's *Therapeutics*:

	Average	Range	Percentage of alcohol Wood's Table
French claret	8	6-12	9.10-17.1
French white wines	10.3	9-12	—
Burgundy	—	—	10.1-14.5
Rhine wines	8.7	7-12	—
Sherry	17.5	16-20	—
Madeira	15.4	15-16	19-24
Sauterne	—	—	14.2
Champagne	10	8-11	12.6-14.8
Port	—	—	16.8-25.8
American champagne	8	6-10	—
American lager beer	3.8	1-7	—
Vienna and Munich beer	4.8	3-5	—
English ale and porter	5	3-7	—
Hard cider	5	4-8	5.2-9.8
Brandy	47	40-50	53.9
Whiskey, American, best	43	41-48	—
Whiskey, American, common	35	25-43	—
Whiskey, Scotch, Irish	40	36-43	53.9-54.3
Rum	60	40-80	—
Gin	30	20-40	51-60

In the table in Wood's *Therapeutics*¹ the averages made by Brande, Julia-Fontenelle, Christison, and Bence-Jones, are somewhat higher than those in the table compiled for the Committee of Fifty.

Alcohol is used in all medical tinctures, and it is the chief ingredient in most of the popular proprietary tonics. The chemist of the Massachusetts State Board of Health² analyzed

¹ Eleventh edition. Philadelphia. 1900. P. 828.

² Document No. 34.

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about 60 of the American proprietary tonics, and found that the weakest is twice as strong in alcohol as beer, most of them stronger than the heaviest wines, and a number as strong as whiskey.

	Percentage of alcohol by volume
"Best" Tonic	7.6
Carter's Physical Extract	22
Hooker's Wigwam Tonic	20.7
Hoofland's German Tonic	29.3
Hop Tonic	7
Howe's Arabian Tonic, "not a rum drink"	13.2
Jackson's Golden Seal Tonic	19.6
Liebig Company Coca Beef Tonic	23.2
Mensman's Peptonized Beef Tonic	16.5
Parker's Tonic, "recommended for inebriates"	41.6
Schenck's Sea Weed Tonic, "entirely harmless"	19.5
Atwood's Quinine Tonic Bitters	29.2
L. T. Atwood's Jaundice Bitters	22.3
Moses Atwood's Jaundice Bitters	17.1
Baxter's Mandrake Bitters	16.5
Boker's Stomach Bitters	42.6
Brown's Iron Bitters	19.7
Burdock's Blood Bitters	25.2
Carter's Scotch Bitters	17.6
Colton's Bitters	27.1
Copp's White Mountain Bitters "not alcoholic"	6
Drake's Plantation Bitters	33.2
Flint's Quaker Bitters	21.4
Goodhue's Bitters	16.1
Green's Nervura	17.2
Hartshorn's Bitters	22.2
Hoofland's German Bitters, "free from alcoholic stimulant"	25.6
Hop Bitters	12
Hostetter's Stomach Bitters	44.3
Kaufmann's Sulphur Bitters, "no alcohol"	20.5
Kingsley's Iron Tonic	14.9
Langley's Bitters	18.1
Liverpool's Mexican Tonic Bitters	22.4
Paine's Celery Compound	21

	Percentage of alcohol by volume
Pierce's Indian Restorative Bitters	6.1
Puritana	22
Porter's Stomach Bitters	27
Pulmonine	16
Rush's Bitters	35
Richardson's Concentrated Sherry Wine Bitters	47.5
Secor's Cinchona Bitters	13.1
Shonyo's German Bitters	21.5
Job Sweet's Strengthening Bitters	29
Thurston's Old Continental Bitters	11.4
Walker's Vinegar Bitters, "contains no spirit"	6.1
Warner's Safe Tonic Bitters	35.7
Warner's Bilious Bitters	21.5
Wheeler's Tonic Sherry Wine Bitters	18.8
Wheat Bitters	13.6
Faith Whitecomb's Nerve Bitters	20.3
Dr. William's Vegetable Jaundice Bitters	18.5
Whiskol, "a non-intoxicant stimulant, whiskey without its sting"	28.2
Colden's Liquid Beef Tonic "recommended for the treat- ment of the alcoholic habit"	26.5
Ayer's Sarsaparilla	26.2
Thayer's Compound Extract of Sarsaparilla	21.5
Hood's Sarsaparilla	18.8
Allen's Sarsaparilla	13.5
Dana's Sarsaparilla	13.5
Brown's Sarsaparilla	13.5
Corbett's Shaker Sarsaparilla	8.8
Radway's Resolvent	7.9

These tonics are a source of alcoholism, but now the United States government obliges their makers to indicate on the label the alcoholic content. This trick of making tonics popular by putting alcohol in them is old. The Philadelphia Medical Society in 1821 protested against the use of certain tinctures because they led to alcoholism, and in 1851 popular alco-

holic patent medicines were Bateman's Pectoral Drops, Jesuit's Drops, Huxham's Compound Tincture of Bark, Duffy's Elixir, Squier's Elixir, Friar's Balsam, and many others; all of which contained much alcohol and caused drunkenness.

Many of the elixirs used to-day in medicine have a high alcoholic content. The official Aromatic Elixir has about 25 per cent.; the official Elixir of Calisaya and the Digestive Elixir, also official, are strongly alcoholic. The official Beef, Wine, and Iron is a popular beverage in prohibition districts.

The action upon man of spirituous drinks is in ratio to their alcoholic content, but ingredients other than alcohol also have marked intoxicant influence: malt liquors, for example, irritate far beyond their alcoholic strength. Beer contains, beside alcohol, extractives, salts, sugar, dextrose, lactic acid, and lupulin, which is the active principle of hops. Lupulin depresses the nervous system. Lager beer has less alcohol and less sugar than other beers; stout and porter more sugar. Sweet cider contains sugar, and after this ferments rough or hard cider is formed. Sour cider is an intestinal irritant. This liquid dissolves lead, and may cause lead poisoning if run through lead pipes. Malt liquors tend to store fat in the body. They are

a common source of gout. Sweet cider causes gout, hard cider does not. The ordinary adulterants of beer are picric acid, strychnia, quassia, chiretta, and *Cocculus Indicus*,—all as substitutes for hops.

In the fermentation of wine, when all the sugar has been changed into alcohol the wine is said to be “dry”; if some sugar remains the wine is “sweet.” The “body” of a wine is the amount and blending of the sugar and extractives. The “bouquet” is the perfume; when this bouquet is perceived in the mouth it is called the “aroma.” The bouquet comes from ethers formed in the process of maturing. Roughness is due to tannic acid. Only red wines have tannic acid, and this acid and the red color come from the skins of the grapes which are left in the fermenting juice or must. Sparkling wines contain free carbonic acid. Champagne has less alcohol than is found in the heavy wines, but more sugar.

The acrid taste of new and cheap whiskey is caused by amylic alcohol, and this alcohol causes headache, and a peculiar smell of the drunkard’s breath. Ethylic alcohol has not these effects.

Gin is obtained by the distillation of unmalted grain. It has from 20-40 per cent. alcohol (sometimes much more) and a little sugar.

Oil of juniper is used to flavor it, and this oil acts as a diuretic. Unlike other spirit, gin does not improve by keeping.

Rum is obtained from molasses; it is flavored with butylic ether, and it contains from 40-80 per cent. alcohol. The best brandy is distilled from wine; but some is obtained from malt. Arrack is the fermented juice of the cocoanut tree, palmyra, and other palms; sometimes it is made from rice. It contains 52 per cent. alcohol. Koumiss is from fermented mare's milk. Liquors are strong spirits, sweetened with sugar and flavored with aromatic substances, as orange peel and cherries.

Absinthe, a drug introduced into France from Algiers about 1848, contains 50 per cent. absolute alcohol, 45.65 per cent. water, a trace of chlorophyl, which gives it its green color, a little sugar and essential oils, and 0.33 per cent. of oil of wormwood. This oil of wormwood is the chief poison in absinthe. It has a convulsive action, attacks the brain and causes epilepsy, and it injures the nervous motor centres. In chronic absinthism there are digestive disturbances, thirst, emaciation, loss of hair, tremor, vertigo, a tendency to melancholy or to epilepsy, and sometimes to dementia. The "absintheur" is liable to auditory and visual hallucinations, and degenerates phys-

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ically and morally to a very low grade. In 1911 53 per cent. of the French murderers were absintheurs. Belgium, Holland, and Switzerland have prohibited the sale of absinthe and France is trying to do so.

Ethylic alcohol in moderate doses modifies the circulation of the blood, and in large doses it paralyzes the control of the vessels and the heart-action. It dilates the skin capillaries, and gives a deceptive sensation of warmth, nevertheless it really reduces the body-temperature by radiation from the blood driven to the surface of the body. The ordinary reduction is only a degree or two, but a large dose of alcohol reduces it from five to nine degrees. Reductions of twelve to eighteen degrees are on record where drunkards have been exposed to cold; and a fall of twenty-six degrees has been observed. A hot alcoholic drink warms by the heat from the water much more than by the alcohol. Arctic and antarctic explorers avoid the use of alcohol altogether; they will not even carry it with them for fear they might be tempted to use it.

Small doses of alcohol stimulate respiration; large doses paralyze the respiratory centres, and the breathing becomes stertorous and slow. This is the cause of death in some cases of poisoning by rattlesnake venom in the United

States, where overwhelming doses of whiskey are ignorantly given.

A moderate quantity of alcohol when taken unfrequently aids digestion; frequent use, especially of an acid wine, tends to disturb digestion. A large quantity of alcohol prevents the assimilation of food, and it retards or fully inhibits digestion. It partly restores the power of fatigued muscles, but the reaction depresses them below the original degree of fatigue. It lessens endurance, and when given to marching troops it diminishes the total amount of work done.

There has been much discussion of the question whether alcohol is a food or not:¹ the chief differences between food and alcohol are:

1. The same quantity of food will always produce the same effect in a healthy body; the quantity of alcohol must be steadily increased to produce the first given effect.
2. The habitual use of food does not induce a desire for an ever increasing amount; such use of alcohol induces this desire.
3. After habitual use of a food a sudden abstinence causes no derangement of the central nervous system; such abstinence from alcohol after habitual use causes this disturbance.

¹ Vid. Wood's *Therapeutics*, Eleventh edition, p. 279 *et seq.*

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4. Foods oxidize slowly in the body; alcohol oxidizes rapidly.
5. Foods are stored in the body; alcohol is not stored.
6. Food increases the activity of the muscular and cerebral cells; alcohol diminishes this activity.
7. Food increases the excretion of carbonic acid; alcohol lessens it.
8. Food strengthens and steadies the muscles; alcohol weakens and unsteadies the muscles.

There are other minor differences.

Wholesome foods are composed of carbon, hydrogen, and oxygen; so is alcohol, but so also is strychnia, morphine, and other poisons. In a hundred parts of ethylic alcohol there are 52.17 parts carbon, 13.04 hydrogen, and 34.79 oxygen. The formula is C_2H_6O . Alcohol is derived from starches or sugars by fermentation. Glucose is $C_6H_{12}O_6$, and by fermentation two atoms of carbon and four of oxygen are set free, making two molecules of carbon dioxid, CO_2 , and leaving two molecules of ethylic alcohol.

Alcohol is not a practical source of energy in physical work. Schnyder¹ made a series of

¹ *Archiv für die gesammte Physiologie*, xciii, pp. 457-484.

twelve experiments carried over some space of time, in which he tested with Mosso's Ergograph the muscular work of a normal index-finger, one of the best trained muscular organs, (1) after no food had been given; (2) after a readily digestible nitrogenous food had been eaten; (3) after a glass of Burgundy wine containing 14.7 grammes of alcohol had been drunk. He found the food increased the total muscular energy 6 per cent. above the result obtained when no food had been given, and that alcohol finally reduced it 4.6 per cent. below the average reached when no food had been given. By combining a meal of soup, meat, vegetables, and a glass of Bordeaux wine, he found as a final result that the quantity of alcohol (29.4 grammes) in that glass of wine caused a loss of 8 per cent. of energy, as compared with the work done after the same meal without the wine. Destrée some years ago arrived at results similar to those reached by Schnyder. Frey said¹ he found that alcohol markedly restored exhausted muscles, but this is contrary to the experience of all athletic trainers.

Schnyder, and Hellsten of Helsingfors, found that half an ounce of alcohol raises the muscular activity for from 12 to 40 minutes after ingestion, but that then a depression fol-

¹ *Annales Suisses, Sciences méd.* 1896.

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lows, which lasts for two hours, and which is below the normal standard. Professor Hodge of Clarke University discovered that dogs to which alcohol had been given have only two-thirds the resistance to fatigue a dog without alcohol has. A dog to which alcohol had been given with its food recovered its strength gradually after the use of alcohol had been discontinued, but a year passed before the animal returned to its normal strength. He found also that dogs to which alcohol had been given become timid. The sound of whistles and bells that caused normal dogs to bark, threw the alcoholized dogs into panic. One of the alcoholized dogs had fits of causeless fear with some evidence of hallucination. Timidity became a characteristic of these dogs afterward, when the use of alcohol had been discontinued. Fear is a chief quality in all human alcoholic mental derangements. The "Dutch courage" from alcohol is merely an effect of stupidity: the drinker does not know enough to be afraid in real danger; his intellectual appreciation of the circumstances in which he may be is blunted. As Professor James said, "The reason for craving alcohol is that it is an anæsthetic even in moderate quantities. It obliterates a part of the field of consciousness and abolishes collateral trains of thought."

It is not a cerebral stimulant in the sense that it enables one to do better intellectual work, but the contrary. Von Helmholtz, the physicist, said that the smallest quantity of alcohol checked in himself all creative mental activity. Exner of Vienna, Dietl, Vintschgau, Kraepelin, Ach, and Maljarewski, and more recently (1907) Dr. Frederick Peterson, found that alcohol in minute quantity quickens mental action for a short time, but then slows it below the normal standard. In larger quantities it retards the activity primarily. The more complicated the mental process the greater the confusion when alcohol is given to the operator. When tested by exact instruments, an operator showed marked decrease in accuracy after drinking even one glass of beer. The physical part of the action was, on the average, quickened after small doses of alcohol, but the mental part was slowed or confused.

If alcohol is used for some time there is a cumulative action. Kürz and Kraepelin found¹ that after giving 80 grammes of alcohol (a pint and a half of ordinary wine) daily for twelve successive days the working capacity of men was lessened from 25 to 40 per cent. Kraepelin in 1900 experimented upon

¹ *Psychologische Arbeiten*, vol. iii.

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a normal man, giving him 80 grammes of alcohol daily. The first series of experiments was in adding columns of figures. One man went through a period of 13 days without alcohol, and later through a like period using the alcohol. When he used alcohol his work decreased 3.1 per cent. in the first eight days. In a final period of 13 days, although the quantity of alcohol had been reduced 50 per cent., the loss in energy was 15.3 per cent.

In a second experiment a more complicated mental action was tested. The men were given nouns arbitrarily, and were obliged to write down as rapidly as possible all the associated words that these given nouns suggested to them. It was a test in association of ideas. For example, if the word *horse* were given the man was supposed to write words like *bay*, *black*, *roan*, *pony*, *saddle*, etc. In 13 days' use of alcohol this kind of work fell 27 per cent. below the non-alcoholic average.

The third series of experiments was in memorizing. The persons tested were set at memorizing groups of twelve-place numbers, say, 315,784,231,675. Without alcohol they improved as the experience developed; with alcohol they fell back 6.2 per cent. daily. That decrease would be much more marked, at the least doubled, as time went on, as is evident

from a calculation of the mean in a series of experience-factors. In any increasing series (accumulation effect of alcohol) of four numbers the arithmetical mean of the first and third (say, the first and thirteenth day—the actual time used by Kraepelin) would be less than the mean of the second and fourth (say, the tenth and twenty-sixth day): This is true no matter how variable the increase due to the experience-factor.

Professor Gustav Aschaffenburg¹ made an experiment on four typesetters, which is often mentioned. He used experienced workmen, and gave them the same printed copy to work from. The first day they worked without alcohol, the second day each man drank one ounce of alcohol in the form of a Greek wine, the third day no alcohol was taken, the fourth day they received an ounce. The reduction of the final result on the days they received alcohol amounted to 14 per cent. in all. One man did 10 per cent. less work on the days he took the ounce of alcohol. The loss was markedly cumulative in all the men.

It is now an established medical fact that chronic alcoholic intoxication can, except in rare cases, be induced by the daily consumption at one sitting of from 40 to 100 grammes of

¹ *Psychologische Arbeiten*, Leipsic, 1906, vol. i, p. 608.

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alcohol (one and a quarter to three and a half fluid ounces). There are about 50 grammes of alcohol in 1.430 litres of Pilsen beer, 1.351 litres of Munich Hofbraü, 1.564 litres of Spatenbraü, 1.020 litres of English porter. A litre is practically a quart; and about three pints of German beer, or a quart of English porter taken at one sitting, say at dinner, induces chronic alcoholism. A pint of champagne, French claret, or of mediumly strong Rhine wine, about a tumbler and a half of sherry, and about half a tumbler of whiskey contain the 50 grammes.

Persons drinking these quantities habitually may show no noticeable symptoms of drunkenness in speech or action for some time, but most of the various lesions of the body described in these pages hereafter can be induced by the quantities given here. A man that takes a pint of claret at dinner habitually is a chronic alcoholic and is certainly injuring his health. The old Roman saying was true, "when you fill your cup the third time you are a drunkard." I have frequently seen marked symptoms of chronic alcoholism in men that take three drinks of whiskey daily at different times, not at once. The test in these cases is to shut off the alcohol entirely, and if within a week or two there is no craving for alcohol the person is not

a chronic alcoholic—but there always is a craving.

Wood's summary¹ of the physiological effects of alcohol is as follows: "Alcohol in small doses acts as a stimulant to the ganglionic cells of the cerebrum, and perhaps also to the motor tract of the spinal cord. In large amounts it certainly is a depressant to the cerebral and spinal ganglionic cells, as well as the nerve-trunks. The action of small doses upon the respiratory centres is not thoroughly established, but is probably stimulant; large doses depress the respiratory centres, and finally they cause death by centric paralytic asphyxia. Upon the heart a small dose of alcohol acts as a direct stimulant, the large dose as a depressant or paralysant. The influence of minute doses on the vasomotor system is not thoroughly worked out, but there appears to be a widening of the blood-paths at a time when the heart is still stimulated, so that there is a marked quickening of the blood-movement. The toxic dose of alcohol paralyzes the blood-vessels, probably both centrally and peripherally. The peripheral temperature is often increased by small amounts of alcohol, and there may be even a slight increase in the central temperature, probably caused by quickening of the circula-

¹ *Loc. cit.*, p. 287.

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tion; the large dose of alcohol lowers the animal temperature, probably by causing vasomotor paralysis, and thereby increasing heat-dissipation. In regard to the effect of alcohol upon the nutrition there is much contradictory evidence, but the present probabilities are that the drug has no specific influence upon the production of heat or of carbonic acid, or upon nitrogenous elimination, and that therefore it has little or no direct effect upon the nutrition, unless it be in poisonous doses, when it certainly disturbs all nutritive processes. After absorption into the blood, alcohol is in part eliminated through the lungs, the skin, and the kidneys unchanged, but is largely burnt up in the system, probably yielding force to the working needs of the organism. Whether as a food it is in health of as much or more value than other hydrocarbons is not at present positively known."

In the early stage of chronic alcoholism there is a general lack of energy, a disinclination to work; even routine work is done carelessly. After that stage there is headache, mental depression, and a feeling of impending misfortune. The mental processes are weakened. The drug appears to act most strongly, even in very small quantities, on the most elevated mental processes, those spiritual activities that have been built up through education and ex-

perience,—the power of self-control, the appreciation of responsibility. The patient can not make up his mind even in trivial affairs; he grows irritable, peevish, irascible; he sleeps badly or not at all; tremors show in the hands, lips, and tongue. Sometimes the tremor appears first in the feet, and may be worse in the morning in cases where there is insomnia. The tremor is “fine,” a quivering rather than a shaking, and made worse by exertion or by an attempt at manipulative skill. To stop this tremor the patient commonly has recourse to a morning drink of alcoholic liquor: food, however, will stop it. Any sudden noise makes an alcoholic in this stage jump and sweat.

Later the features grow flabby; acne rosacea (the red nose and cheeks of the drunkard) may occur; the skin is pale and smooth, the tongue may be furred, flabby, tremulous, marked by the teeth; the breath foul; the mouth and throat dry; the throat catarrhal. There may be fits of wheezy coughing, a loss of appetite for food especially in the morning; morning nausea; alternate constipation and diarrhoea.

In chronic alcoholism the bodily lesions vary: in one patient the brain is chiefly affected; in another, the heart and arteries; in a third, the kidneys; in a fourth, the liver; and all or several of these organs may be attacked at once in

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the same person. Fatty degeneration, and other diseases of the heart are common. In young drunkards sudden death from a fatty heart is a common occurrence. Probably an inflammation of the vagus nerve is also a cause of sudden death. When the lungs are involved, oedema (dropsy), pneumonia, and tuberculosis are the forms of attack. The spleen and pancreas suffer from chronic congestion and consequent degeneration.

The liver is probably never normal in a confirmed drunkard. One of the chief functions of the liver is to neutralize poisons coming from the gastrointestinal tract, and the poison from alcohol may inhibit this function. Fatty liver can be brought about by alcoholism among several possible causes, especially by the use of malt liquor. The liver in this disease is enlarged; sometimes to twice or thrice its normal size, and if the source of irritation is not removed the disease is fatal. After the disease has been well established even abstinence from alcohol will not save life. Acute congestion of the liver is a common effect of alcoholism. This condition in itself is important, because its frequent recurrence can result in cirrhosis, which, if unchecked is fatal in about three years.

In the group of hepatic diseases called the

cirrhoses, the liver degenerates, and scar-tissue forms which obstructs the passage of blood. Distilled alcoholic liquors are the chief cause of portal cirrhosis. The liver may be found very small, but usually it is enlarged; it may be "hobnailed" in appearance, covered with small bosses like the top of a fruit-cake. The liver-cells are destroyed. The spleen is enlarged and congested in most cases of hepatic cirrhosis. The gastrointestinal tract is also congested, and may bleed; the kidneys and heart are congested. Fatal tuberculosis of the belly is a common complication. The ordinary symptoms of cirrhosis are those of gastrointestinal inflammation, nausea, and vomiting; later there is vomiting of blood, and bleeding from other parts of the body. There may be apathy, stupor, and coma, or active delirium, convulsions, paralyses, and contractures. Dropsy of the belly is common in the last stages of this disease.

Alcohol is one of the common causes of the inflammation of the kidneys called acute or chronic Bright's disease. The most typical form is chronic interstitial nephritis, with chronic inflammation throughout the organ. The onset is insidious, and the disease is commonly far advanced when first discovered. The heart is exhausted through the increased

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blood pressure. Uræmic conditions are observed toward the end—drowsiness, neurasthenia, dizziness, apoplectic hemorrhages into the brain, vomiting, diarrhœa, coma, and death. The prognosis depends upon the condition of the heart and blood-vessels, and the habits of the patient. Careful treatment may prolong life in a tractable patient for many years; active alcoholism, of course, makes short work of the death.

A curious symptom of perverted judgment in alcoholics is that if the physician shows them that the kidneys are dangerously affected, that even dropsy is setting in, or that the liver is cirrhotic, they are likely not to pay the slightest heed to this information; they are not even interested in it as a bit of news. If an insurance-examiner refuses the alcoholic as a risk because of his kidneys, the patient, instead of becoming frightened, is likely to accuse the examiner of ignorance or fraud.

Neuritis, an inflammation and degeneration of the nerve-fibers, is a not infrequent disease, and alcohol is its commonest cause. In most cases it begins in the muscles of the legs. The muscles along the shin grow weak, the foot drops, and this forces a high step. The muscles waste, and walking becomes impossible. The arms also may be involved. The optic

nerve sometimes is attacked, and the diaphragm may be paralyzed, causing death by suffocation. Loss of memory, hallucinations, and delirium, not seldom occur. There is a possibility of a full or partial recovery, or the disease may be fatal. Dr. H. Eichorst in a series of 67 cases of alcoholic neuritis¹ found that all the patients were over 20 years of age except one boy eight years old, who for two years previously (from his sixth year) had complained of pain in his loins, and increasing weakness in the muscles of his legs and back. The child was finally caught stealing out of bed at night to drink the alcohol burning in lamps, and when treated for alcoholic neuritis he recovered health.

Alcoholism lessens the power of resistance to infectious diseases. The mortality from pneumonia in non-alcoholics is about 23.9 per cent., in alcoholics it is 50 per cent. All severe systemic diseases are much more fatal in alcoholics than in others. Diabetes is frequently associated with alcoholism, but it is also common in persons that are not given to alcoholism in any degree. The lack of resistance to infection makes a trivial wound very dangerous to an alcoholic. A cut in the scalp that can be closed with two or three stitches, a broken knee-

¹ *Correspondenz-Blatt. f. Schweizer Aerzte*, Vol. 401, No. 29.

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cap, or a similar accident, in alcoholics, very frequently results in death.

In Germany at the middle of the nineteenth century alcohol was used so seldom in the treatment of infectious diseases that a physician in Coblenz was held responsible for the death of a typhoid patient for whom alcohol had been prescribed. Todd of Dublin revived in Great Britain the use of alcohol in the treatment of pneumonia, and the Germans also took up this method of treatment in febrile conditions. After the Wiesbaden Congress in 1880, however, the experimental work by Schmiedeburg, van Noorden, and Strümpell cast discredit on treatment by alcohol, and the tendency in Germany since then is toward the abandonment of alcohol. In 1897 the Vienna General Hospital spent \$10,000 for alcohol, but in 1905 only \$5,000.

Laitenen¹ found that alcohol in even small doses lessens the bactericidal quality of the blood, and thereby diminishes the animal's resistance to infection: it increases the susceptibility of animals to splenic fever (anthrax), tuberculosis, and diphtheria. The quantity of alcohol used by Laitenen in these experiments is equivalent to what a man would be getting by drinking a half pint of beer daily.

¹ *Zeitschrift f. Hyg. u. Infectionskrankh.*, 1907-8, lxiii, 139.

Deléarde of Lille proved that alcoholized rabbits are not protected against rabies by the Pasteur serum as normal rabbits are; and Professor Abbott of the University of Pennsylvania found that the erysipelas coccus acts on alcoholized rabbits as it does on human alcoholics. Alcohol keeps the protecting leucocytes out of the circulation. Fillinger¹ examined the blood of two healthy young men before and after drinking champagne, and the resistance-quotient of the red corpuscles dropped from 88 to 43 in one hour in one of the men.

Tuberculosis patients that use alcohol resist much less than non-alcoholics. Baudron found that in those districts of France where the annual per capita consumption of alcoholic liquors was 12.5 litres, the mortality from tuberculosis was 32.8 per 1,000; when the per capita consumption of alcoholic liquors was 34.6 litres the mortality was 107.8 per 1,000. In Prussia, Guttstadt found the mortality from tuberculosis per 1,000 in gymnasium teachers 126, in physicians 113, in Protestant clergymen 76, in hotel-keepers 237, in brewers 344, in waiters 556. In the Sixth Annual Report of the Phipps Institute for Tuberculosis in Philadelphia (1911) of one group of 442 tuberculosis patients that gave a history of alcoholism 20.81 per cent.

¹ *Deutsche medizinische Wochenschrift*, Berlin, 38:21.

died; of a second group of 1,900 cases that did not use alcohol 10.10 per cent. died. According to this report alcoholism in the parents of tuberculous patients raises the mortality of the disease. Of a group of 483 tuberculous patients that had alcoholic parents 15.31 per cent. died; of a second group of 1,835 patients whose parents were not alcoholics, 10.78 per cent. died. In these two particular groups the difference is less marked than in other groups examined.

In acute infectious diseases there are disturbances of the heart and blood-vessels—the heart grows weak, as a result, apparently, of paresis of the vasomotor centres. The disturbance is primarily in the vascular mechanism, and this finally lowers the heart-action. Raczyński¹ Rauberg and Passler,² and others, studied the effect of streptococci, colon bacilli, pneumococci, and diphtheria bacilli on the cardiovascular system, and these bacteria, despite minor differences, all paralyze the vasomotor centres, and this cuts off the blood-supply to the brain, muscles, and skin. There is a final involvement of the heart in all these diseases except pneumonia. In general, in acute infectious diseases, impairment of the regulating mechanism of the blood vessels is a first evil effect, and the weakening of the heart is a consequence thereof.

¹ *Deutsch. Archiv. f. klin. Med.*, 1897, lxiv, 27.

² *Ibid.*, 1899, lxiv, 652.

The therapeutic measures should, then, be directed toward the prevention or correction of these vasomotor disturbances.

Alcohol is commonly not a reliable drug to use for this purpose, but this rule apparently does not hold for certain phases of typhoid fever. In minute quantities, that is, in doses of a solution of alcohol in water from 0.15 to 0.3 per cent. in strength, which is equal to from 6 to 12 c.c. of absolute alcohol, or about 12 to 24 c.c. (3 to 6 teaspoonfuls) of whiskey, alcohol causes a slight and useless rise in the blood-pressure (10-20 mm. of mercury, according to Kochmann, Bing, and Wiesenfeld). Careful observers, like Crile and Cabot, have not been able in America to find even a slight elevation of pressure with any dose. A larger quantity of alcohol invariably depresses the cardiovascular system. To depress this system 40 c.c. of absolute alcohol, or 80 c.c. whiskey (a little more than two and a half fluid ounces, or five tablespoonfuls) is sufficient. Cardiac tonics, like digitalis, caffein, and camphor, are invariably effective, alcohol is never a direct tonic, and it is invariable only as a depressant.

The advocates of the use of alcohol in pneumonia have not collected the statistics correctly. The mortality of pneumonia depends very largely upon the age of the patient. In healthy

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young men, such as soldiers, the mortality is less than two per cent. when only symptomatic treatment is used; in old persons the disease is extremely fatal no matter what therapeusis is employed. Dr. John Hay treated every second person in a series of pneumonia patients with alcohol, with a mortality of 45.5 per cent.; in his other group to whom no alcohol was given the mortality was only 29.5 per cent. This question, however, has not been worked out finally.

Dr. A. Jacobi of New York City says he finds alcohol even in large doses indicated in cases of sepsis, especially in the sepsis of a malignant diphtheria. Dr. Joseph O'Malley of Philadelphia, and many other practitioners, who have had, like him, a wide experience in the treatment of typhoid fever, use whiskey in certain phases of that disease, even when the patients have not been alcoholics. The indication for alcohol is that the pulse is not compressible and the heart is consequently very rapid. About 6 or 8 ounces of whiskey in the 24 hours then lowers the pressure better than other drugs. When the pulse softens the alcohol must be stopped at once or it will cause delirium. Flushing is also a symptom which indicates that the alcohol is to be no longer used.

The statistics of the United Kingdom Tem-

perance and General Provident Institute of Great Britain covering 40 years (1866-1905) show that among total abstainers the deaths actually amounted to 71.54 per cent. of the calculated probable deaths, whereas among the moderate drinkers the deaths were 94 per cent. of the calculated probabilities. Other life insurance companies get about the same results. Nearly 40 per cent. of the "bad risks" rejected by the insurance companies are alcoholics. In confirmed alcoholics the insurance mortality runs 25.5 per cent. *over* the calculated probability, and now no reputable insurance company will insure any alcoholic. The best insurance actuaries calculate that a man of 20 years of age who is a total abstainer will live 42.2 years longer, but that a drinking man will live only 15 years longer. C. P. Huntington, of the New York Life Insurance Company, says that the mortality of liquor manufacturers (workmen, brewers, and the like) between 50 and 60 years of age is three times higher than ordinary. The Connecticut Mutual Life Insurance Company's tables of mortality in 97,787 policies that came up for adjustment was, among professors and teachers 61 per cent. of the expected, lawyers 79 per cent., manufacturers 81 per cent., liquor dealers 142 per cent.: the liquor dealers came next below seamen.

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Alcohol tends to cause sterility. In five among twelve autopsies on alcoholic women between 20 and 30 years of age, the ovaries were markedly atrophic, and in women between 31 and 40 they were atrophic in five among eight. Simonds¹ observed that 60 per cent. of male chronic alcoholics on post mortem examination show azoospermia—inert sterile spermatozoa.

¹ Osler's *Modern Medicine*, vol. i, p. 173. Philadelphia, 1907.

CHAPTER II

THE ALCOHOLIC INSANITIES

The evil effects of alcoholism on the human nervous system, the medium of communication between the mind and the external world, are especially grave and complicated. This system ramifies into infinitesimal subdivisions in every part of the body, and consists of the neurons, the astrocytes, and the apparatus for supplying blood and lymph to these cells. Every function of the body, and every mental activity, is worked out through the nervous system, and the presence of the blood supply with oxygen is essential to the activity of this system.

The principal element of a body-cell is the nucleus, with its cytoplasm; and the nucleus is the centre of activity. These parts are microscopic in size; but in typical nerve-cells there are projections extending from the cytoplasm, which constitute a nerve fibre and may be very long; others are short. The chief projection from a cell, when this projection is considered in itself, is called a nerve fibre; in relation to

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the cell it is the Axone. The axone throws out branches in turn, which are known as Collaterals; the collaterals divide into small twigs which are the Terminal Arborization. Beside the axone with its collaterals, other, secondary, projections are given off from a nerve-cell; and these, because of their treelike form, are named Dendrites. The cell-body and its projections collectively constitute a Neuron. In the nervous system the White Matter is made up of bundles of axones, the Gray Matter is a mass composed principally of cell-bodies. Some axones are very long: there are cell-bodies in the lumbar enlargement of the spinal cord, the axones of which go down to the feet, sometimes 40 inches distant. Other lumbar cells send axones up and down for the whole length of the body. Axones and collaterals have interrupted myeline sheaths, which, in the opinion of some physiologists, insulate the axone; others deny this function to the sheath. The neurons intercommunicate, through the collaterals and dendrites apparently.

Beside the neurons, we find in the nervous system Neurogia Cells. These Neurogia cells, or Astrocytes, have a cell-body that is spheroid or ovoid in shape, and resembles a tiny taproot; from this as a centre radiates stellately a mass of rootlets. These cells act as the active

excretory agents, scavengers, for the nervous system. They take up in their rays and bodies the used plasma and the detritus of nerve-cells, and throw this effete material out into the lymph-spaces, whence it is floated away.

The chief nerve-cells have a body, which is somewhat pyramidal in shape, and these are the Pyramidal Cells. If there is such a thing as a distinct "psychical cell," the pyramidal cells fulfill this office. The mental faculties are in especial relation to the cerebral cortex, that is, the thin covering of nervous substance that envelopes the entire surface of the brain. In this cortex are distinguished various areas, connected by long nerve-tracts with the organs of sense, the skin, the muscles, the entire surface of the body. This connection is the Projection-System. Other areas, not connected directly with the outer world, are joined closely by nerve-fibres, and connect with the projection-system; these make up the Association-System.

In the projection-system are the definite centres for the movements of the individual members of the body, for the senses, and for speech. The speech-centre is on the left side for right-handed persons, and on the right side for left-handed persons. Destruction of this small area causes loss of speech, and of the understanding of spoken words.

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In the association-system are the centres, or cerebral organs, for the psychical processes. These are in the frontal lobes, but it is not possible, at least from our present knowledge, to plot them out definitely. Injury to this part of the brain affects the use of the mental faculties, yet in many forms of evident insanity we can not find even microscopically in any part of the brain a lesion now recognized as such by medicine.

The effect of alcoholism on the neuron consists principally in degenerative atrophy of the cells in the gray matter. The nuclei are injured, in extreme cases even split up; and the dendrites show pathologic swellings along their course. Inflammation of the cerebral and spinal membranes occur, and neuritis is frequent. The medullary sheath on the axone disappears in places where there is neuritis, and the axone itself may be broken. If the inflammation is confined to the peripheral axones, recovery is possible, but if the cerebral matter is affected the prognosis for recovery is very bad. Neuritis of the vagus nerve probably has much to do with heart diseases of alcoholism, such as dilatation and fatty degeneration. Alcoholism has even worse effects on the blood-vessels and lymph-channels than

upon the nerves. There is a widespread arteriosclerosis and atheroma of the arteries, and a clogging of the lymph-flow. Dr. Alexander Lambert found¹ oedema and congestion of the brain membranes in 72 per cent. of 76 brains of male alcoholics, and in 51 per cent. of 29 female alcoholics. Congestion of the cerebral tissue was present in 54 per cent. of the men, and in 14 per cent. of the women. Chronic meningitis (inflammation of the cerebral membranes) was observed in 65 per cent. of the men and 41 per cent. of the women. All these inflammations in alcoholics have a hemorrhagic tendency.

Every one knows that alcoholism is one of the most frequent causes of insanity, but in any consideration of insanity we are checked at the outset by the difficulty of defining the condition. Some persons are so evidently insane that a child can recognize the fact; others, who are no less insane, conceal the symptoms so securely that skilled alienists must study the cases laboriously to make a correct diagnosis.

There is a group of psychoses in which a degenerate state of the intellect dominates the symptoms, and another, and much larger,

¹ Osler's *Modern Medicine*, vol. i, p. 173.

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group in which signs of irrational volition stand out more prominently than the other defects. The alcoholic insanities are in this second category.

A fundamental fact in morality and civilization is the capability man has of foregoing a present desire for the sake of a greater but more distant good, and this fact is equally important in any consideration of the great group of psychoses that constitute the alcoholic insanities. The savage is prone to yield to the first impulse; to succumb at once to lust, greed, or revenge; and this is to the loss of greater ulterior benefit. In the same manner he yields to sloth rather than to incitements toward industry. Among the so-called civilized peoples, the inferior nations or individuals are "impulsive." We judge a man's moral worth largely by the habits of self-control he shows. Every rational observer deems a man that gratifies his present desires, no matter what the evil consequences of this indulgence may entail, as inferior to the person that foregoes present indulgence for future but greater good. There are other qualities and standards in morality than this self-control, but with reference to temperance restraint is very important; as a lack of self-restraint, a proper use of the will, is the source

of all the evil in alcoholism, and the allied phases of intemperance.

Insanity is materially vicious or criminal. It is not formally vicious or criminal, because the intellect and will can not function normally, and the lunatic is irresponsible; but craziness plays the criminal more effectively than a perfect actor can personate the evil-doer. Qualities established by civilization, culture, laboriously built virtue, disappear, and leave the dangerous savage, or brutally impolite man. We are inclined to associate insanity with the intellect alone, but it affects the will, memory, and imagination.

The actions of the insane man may be so like those of the sane man that it is extremely difficult to diagnose the true condition. The insane man is idle, he is incapable of industry; sane men may be idle, of course, but the insane man is extremely idle; he can be so idle as to refuse to take the trouble of eating. Extreme differences in value between the present gratification and the future benefit foregone may be a sign of insanity, but this misjudgment is found in the sane. The proximity or remoteness, the certainty or uncertainty, of the advantage rejected for present indulgence may be so marked as to suppose insanity, or it may reach a degree only so far advanced as

to leave the observer in doubt between sanity and insanity, yet insanity may really be present.

Scientific definitions of insanity as given in the textbooks of psychiatry are mostly descriptions of a state rather than a logical definition. Often they are mere useless platitudes to the effect that an insane person is crazy. Viciousness alone is not a proof of insanity, nor is extremely foolish viciousness. Nerve-lesions found in the insane are often found exactly the same in the sane. Theories about conditions and associations of neurons may be proposed, but for all the actual proof adduced they are likely to be childish mythology. Alienists are not seldom as imaginative as poets, and what the combined learning of the greatest neurologists in the world does not know of the mere anatomy and physiology of the nervous systems is immeasurably greater than what it knows.

That a man reasons with skill is no proof in itself of sanity. Many insane men reason perfectly, but from false premises; and if you take them on a subject not personal they may reason with brilliancy, and from sound premises. Mr. Chesterton says¹ with full truth: "Every one who has had the misfortune to talk

¹ *Orthodoxy*. London, 1909.

with people in the heart or on the edge of mental disorder knows that their most sinister quality is a horrible clarity of detail; a connecting of one thing with another in a map more elaborate than a maze. If you argue with a madman it is extremely probable that you will get the worst of it; for in many ways his mind moves all the quicker for not being delayed by the things that go with good judgment. He is not hampered by a sense of humor or by charity, or by the dumb certainties of experience. He is the more logical for losing certain sane affections. Indeed, the common phrase for insanity is in this respect a misleading one. The madman is not the man who has lost his reason. The madman is the man who has lost everything except his reason.”

The crazy man’s reason, when it is still in use, works steadily, but leaves the possessor in the same spot like a dog on a treadmill. The insane man is narrow-minded, he can not see two or three things at once, in their proper relations. The undeveloped mind of a sane child will not let it see two or three things at once, and it stumbles on the street. This infantile condition of mind, however, persists throughout life with many sane persons, till they are butted on the

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street by an automobile, or step into a cellar whilst observing stars. The lunatic, like the child, while in stages that make diagnosis difficult, sees only one thing at a time, and that inadequately, but he can reason like a biologist talking on theology, and just as logically, and just as foolishly. You can, however, persuade the child to come over to your way of thinking, but the lunatic will not be persuaded; he may be distracted, diverted from a train of sophistry, but not convinced. The sane man is complex, the insane man is abnormally simple; the sane man doubts, the insane man is always cocksure; the former thinks, the latter reasons; the really sane man is humble, the insane man is always proud; sanity tends toward virtue, insanity away from virtue; but all these antitheses are unfortunately reversible.

Sanity is morally responsible, insanity is irresponsible. Suppose a man left to himself, uninfluenced by an external agency, fear, drugs, or the like, and confronted with simple, not recondite, motives for action; is he, after a period of observation extended over several days, (1) conscious of the gross right and wrong in his acts; and (2) has he freedom of will as regards doing or not doing those actions? If one or both of these conditions are

lacking he is not responsible, and he is insane. Yet this test is defective, because it does not cover certain paranoias practically, nor the almost lucid intervals in cyclic insanity; and the examiner can not tell absolutely, nor can the patient himself, in many cases, whether the suspected person can differentiate right from wrong accurately enough to make such knowledge responsible, or that he has freedom of will.

There are innumerable persons in a mental condition such that no human skill can decide accurately whether they are insane or sane: God alone is the only perfect alienist. We must, however, treat all these doubtful persons as sane, or as curable, and not give up the effort to heal them until the hopelessness of the condition is evident. Resuscitation occurs so often in these conditions that neglect of effort on our part is malpractice.

The mental deteriorations, which are unmistakably such, brought about by alcoholism, are classified thus:

1. Ordinary drunkenness.
 2. Acute alcoholic insanity or delirium tremens.
 3. Chronic alcoholic insanity.
- The subdivisions of chronic alcoholic insanity are:

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1. Melancholia.
2. Mania.
3. Persecutory Delirium.
4. Amnesic Forms.
5. Alcoholic Mental Confusion.
6. Pseudoparanoiac Forms.
7. Alcoholic Pseudoparalysis.
8. Alcoholic Progressive Paralysis.
9. Alcoholic Epileptic Insanity.

Seneca said *Ebrietas est voluntaria insania*, but while technically ordinary drunkenness is not classed as insanity, chronic alcoholism leads to true dementia. The mental changes in alcoholism are usually gradual. The intellect is blunted, the judgment becomes imprudent, the moral conscience is dulled, before real insanity is apparent. A chronic drunkard has a foolish laugh even when he is sober; he is addicted to thin childish humor and faint puns. A neuropathic diathesis tends toward alcoholism, and conversely alcoholism begets a neuropathic disposition. He is therefore irritable. Unreasonable irritability, storms of rage without sufficient provocation, are characteristic of the condition. Wife-beating, cruelty to children, to inferior animals, attacks upon associates, are of frequent occurrence.

A brutal selfishness is a chief symptom of advanced chronic alcoholism. When the

chronic alcoholic spends money on anything but his own decaying carcass he is gratifying vanity, avoiding a scolding, or he is already demented. A chronic alcoholic almost as a rule will not pay his bills, even when he has a plenty of money, through a sense of justice or honesty. He is like a confirmed neurasthenic in this respect: that a neurasthenic pays all bills promptly is a good prognostic sign. This concentration on self makes the alcoholic stubborn, impolite, shameless, regardless of his appearance in public, insolent, a carping critic of political and ecclesiastical authority. There are exceptions, but this is the rule.

One of the frequent mental derangements incurred by the married alcoholic is a vicious jealousy of a wife or husband, which gives rise to groundless suspicion of marital infidelity. When the condition becomes fixed it commonly remains permanent, and it may lead to homicide. The cause of this peculiar mental obliquity is that alcohol irritates and excites the genital centres, but decreases the power of sexual satisfaction; there is a consequent constant irritation of the genital tract, which the weakened mind elaborates into delusions. A drunkard will swear in court positively that he has caught his wife in adultery, mentioning all the circumstances, and the whole story is the

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outcome of a delusion. It should be a rule of legal evidence that a drunkard's testimony in trials of this nature is not to be admitted. The groundless suspicion of marital infidelity is a symptom also of chronic cocaine intoxication.

Acute alcoholic insanity is called *Delirium Tremens*. There is also an abortive form of this psychosis, which is less severe than the typical delirium. Delirium tremens, the trembling delirium, is often incorrectly called Mania a Potu. It is not a mania, but an acute hallucinatory confusion, in which consciousness is more impaired than in a typical mania. Mania a Potu is a genuine mania, and it will be described with the chronic alcoholic insanities.

Delirium tremens is the commonest of the alcoholic insanities, and not many persistent drunkards escape it. It may come after a few debauches, when the quantity of alcohol ingested is large, and the time for its excretion is insufficient. It requires about two days to get even a moderate dose of alcohol out of the body, and accumulation of the poison overpowers the nervous system: this system yields more rapidly to intoxications than the other less finely organized tissues of the body. It also responds to stimulation more promptly than the other somatic organs. When alcohol is suddenly withdrawn from the chronic drunk-

ard, there is a neurotic lowering of blood-tension and collapse, as if a large dose of a poison had been administered.

Before the onset of delirium tremens the patient has usually morning nausea, and he is unable to take nourishment; he sustains himself by alcoholic stimulation, and this ends in collapse. There is a period of unquiet sleep, restlessness with precordial anxiety, fright at sudden noises and lights. There is a roaring in the head, fiery stars appear, the patient grows more and more anxious and irritable, until finally, within from three or four to about twenty-four hours, the delirium sets in, with muscular tremor.

The hallucinations take the forms of animals usually, and the phantasms are always in motion. Snakes, rats, beetles, crawl over the bed or upon his body. Dogs jump at him, bats flap about his head, gargoylelike tigers, elephants, lions, circle around him. In some cases the hallucinations take the shapes of men, devils, or witches; or bestial orgies are enacted before the diseased imagination. Auditory hallucinations are frequent, but not so common as the visual; hallucinations of smell and taste are met with, but they are less frequent. Cries for help, clangor of bells, shrilling of steam whistles, threatening voices, fill the air about

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those that have auditory hallucinations. Erotic erethism and pain referred to the genitalia may be mixed with the phantasms. Some patients feel ants or worms crawling under their skin. Regular patterns on the room furniture turn into lines or piles of coins. Actual sights or sounds are distorted into hallucinations.

The disturbance of consciousness is sufficient usually to prevent the patient from recognizing his surroundings. He mistakes hospital attendants for friends or enemies; he takes journeys; repeats old quarrels. Sometimes he is joyous for a few moments, then suddenly in terror for his life; he alternates between foolish laughter and the agony of death. Most delirium tremens patients despite all these mental disturbances can give direct and intelligent answers to questions, describe their present sensations, and the like; but the narration is interrupted by sudden passing accesses of the hallucination; and although the answers are congruous and true, the sufferer apparently is answering absentmindedly, he does not clearly understand what he is saying.

In delirium tremens the hallucinations at times pass over into delusions, which are more or less fixed. This happens especially after repeated attacks of the delirium. Usually there is intelligence enough left to recognize

for a short time that an hallucination is such, but this degree of control may be lost. The delusions are morally painful: the drunkard supposes that his friends are treacherous, his wife unfaithful, his children are dead (he sees them dead), he is to be hung for his own crimes, and so on. The intense selfishness of alcoholism in general is carried over into its insane moods. Persistent delusions make the prognosis bad for recovery of mental health: it supposes serious nervous lesions. Delusions that begin in the final stage of an attack of delirium tremens may disappear after some weeks.

The patient is always restless and anxious; he can not keep still for more than a few seconds. He wanders about, picking up imaginary objects, driving away insects, answering fancied calls to him, seeking protection from those near him. Such patients rarely commit suicide, but that is a possible outcome. Murder in delirium tremens is rare, but always possible, and such a patient must be regarded as extremely dangerous if he has hallucinations of impending death, or injury.

There is insomnia in the early stages of the attack, and after exhaustion a stuporous condition, and finally true sleep. The tremor is a fine muscular trembling, most marked in the muscles of the face and hands, but present also

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in all the voluntary muscles. The tremor stops for a moment under mental excitement. It obliges the patient to do any action precipitately, if he will do it at all: he must lift a drink to his lips quickly or he will spill the liquid. Where there is muscular spasm the attack is severe, and such spasms occur oftenest in the muscles about the eyes, and on the forehead.

At times a rise in temperature is observed; and in groups of delirium tremens patients albumen in the urine during the early stage of the attack is found in from 40 to 80 per cent. of the cases. When the delirium is marked the albumen disappears, and it reappears as the delirium lessens.

The average duration of an attack of delirium tremens is from a week to ten days; some cases recover consciousness in four days, others not for even eighteen days. Where there is starvation, owing to gastritis, death may result. The mortality depends largely on the medical treatment: some physicians save nearly every case, others lose as many as 20 per cent. by death. Where œdema of the brain, called also "wet brain," and serous meningitis, appears in delirium tremens, and it happens in about 15 per cent. of the cases, the mortality is very high under ordinary treatment—nearly 65 per cent. Here again skill in

the physician is very important. If pneumonia complicates delirium tremens, apart from wet brain, the mortality is close to 48 per cent.

The Abortive Form of Delirium Tremens is like the typical disease in the course of the attack, except that it stops short of hallucinations during the waking state. There is after an alcoholic debauch, the same atonic dyspepsia, tremor, mental anxiety, precordial distress, insomnia, sweating, and hideous dreams; but the disease does not reach the stage of hallucination.

The prognosis of recovery in delirium tremens is affected by the presence or absence of wounds and infectious diseases. Bonhoeffer¹ found a mortality of 11 per cent. in 1,077 cases, and of these 57 per cent. were caused by pulmonary diseases. In uncomplicated cases he had a mortality of less than one per cent. Lambert in 709 cases at Bellevue Hospital, New York, found a mortality of about 20 per cent.; the pneumonia cases in Bellevue had a mortality of 48.8 per cent. In cases where the delirium and the motor symptoms are severe the prognosis is grave. When delirium tremens comes on in consequence of wounds about 50 per cent. of the cases die. The medical treatment of delirium tremens will be given below.

¹ Osler, *loc. cit.*, p. 187.

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ALCOHOLIC MELANCHOLIA differs from melancholia arising from other causes by its sudden onset. There may be only headache and insomnia as prodromal symptoms; then suddenly the patient is overwhelmed with dreadful hallucinations of death, torture, murder, threatening voices, as in delirium tremens. More rarely there are hallucinations of animals as in the acute delirium. In the alcoholic melancholia very intense neuralgic pain occurs in the peripheral nerves. Albuminuria is often present. The attack seldom lasts beyond ten days. Often there are permanent delusions as a consequence of the disease, and these tend to develop into a permanent delirium of persecution.

ALCOHOLIC MANIA is as unexpected in its outbreak as the melancholia just described. It often comes on at night after a desperate oppression of fear. At this period an alcoholic maniac is very dangerous: he is likely to brain any one in his neighborhood, and he does this in absolute unconsciousness. As almost any chronic alcoholic with a neuropathic inheritance is liable to an outbreak of this kind, such persons are a constant menace to society.

The premonitory symptoms of this mania are increasing irritability, sexual excitement, general change in the facial expression and the

manners of the patient, and an enormous desire for spirits. There is tremor, sometimes facial paralysis, contracted or unequal pupils, thick or hesitating speech, and exaggerated muscle-reflexes.

The blind, reckless fury of the maniacal outburst itself resembles that of the paretic, but in the alcoholic mania there is no temporary remission. The alcoholic mania resembles paresis somewhat in the delusions of self-importance. The maniac says he is God, a king, or the like; and if his claims are questioned he breaks out into a screaming frenzy in which he tears clothing and destroys furniture. The angels of heaven crowd about him in untold multitudes to do him honor. He is sleepless. He must be kept in a padded room or he is likely to dash his brains out, or break his bones. There are abortive remissions, and renewed outbursts, until the patient is exhausted. At the end sleep comes, but on awakening the sufferer almost always shows permanent mental deterioration.

Many cases go on from violence to a muttering delirium; then there is collapse, and death. Some take on a chronic course. Dementia follows the mania; the delusions grow confused, the nutrition sinks, the pulse is weak, the temperature subnormal. This de-

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mentia grows worse, and after some months death results from pneumonia, diarrhoea, or progressive decline. Not more than 40 per cent. of alcoholic maniacs recover as far as partial sanity.

In cases that have been sectioned post mortem there was intense congestion of the membranes and substance of the brain, general oedema, atrophy of the convolutions, and especially widespread damage of the blood-vessels.

ALCOHOLIC PERSECUTORY INSANITY is a suspicious or persecutory delirium, the onset of which may be rapid or gradual. A rapid development is the more common form. The symptoms resemble true paranoia so closely that the disease is often called Alcoholic Pseudoparanoia.

After the usual abuse of alcoholic liquor, insomnia and irregularity of the blood-circulation show. Then hallucinations, especially auditory, are complained of. Voices mock or threaten the patient, and these voices speak especially of his reproductive organs. They tell him he is a sexual pervert, and so on. The voices speak obscenely; they tell him he is hypnotized; destroyed by electric currents. He has enemies that are trying to poison him. Sometimes there are hallucinations of smell

and taste, and delusions. Tubes are run into his room to send in poisonous gases, and the like.

The common delusions are sexual; after these come delusions in which life is supposed to be endangered. The enemies are usually invisible; they act from a distance by electricity or other machinery. The sufferer is in great fear, and he seeks protection from the police or in asylums. At times there are notions of grandeur mixed with the persecutory symptoms. The patient thinks he is president of the United States, a king, or is in some high position, and that secret enemies are trying to destroy him.

When the onset of the disease is rapid, in a few cases there may be recovery of mental health. Other cases go on into progressive dementia. Some recover partly after several years of insanity. When the disease comes on gradually every hope of cure is lost, as a rule. All the symptoms of persecution already mentioned occur, but the patient is very dangerous. In fact there is no insane person more dangerous than one laboring under chronic alcoholic persecutory insanity. He is irritable, furious, and murderous, and he should always be kept in an asylum. The memory finally fails, and dementia ends the state.

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ALCOHOLIC AMNESIA (forgetfulness) is an insanity in which derangement of the memory is especially conspicuous. All alcoholics are forgetful, but the loss of memory can be so marked as to make it the chief symptom of the disease. Amnesic alcoholics commonly drink in the morning; they have the morning nausea, tremor, spots of anaesthesia; but they seldom show the extreme irritability of the alcoholic, probably because the neurons are more deeply injured than in other conditions. Hallucinations and delusions are not pronounced in this form of disease, and they may be entirely absent. Fétré produced monsters in chickens by exposing eggs to the fumes of alcohol, and I have seen one case where a man that never drank alcohol, but who worked constantly in its fumes, lost his memory while in the fumes, and recovered it after he had kept out of these for a few days.

The typical symptom of alcoholic amnesia is instantaneous forgetfulness of what happens or is said in the presence of the patient. If one with a severe form of amnesia is told a man's name he loses all memory of it within a few seconds, and no effort will bring it back. He can not repeat a simple sentence after a dictation. Lighter conditions of amnesia can remember part of a conversation for a little

while. In fully developed amnesia the patient can not recall names, he loses the order of his work, he may be hungry at meal times but he forgets to eat. If he is sent across a room to bring an object, he will forget what he is sent for before he reaches the object. This process may be repeated for an hour if the experimenter so wishes, and the patient will not even notice the repetition. Knowledge gained in childhood often remains, hence the possibility of speech. He may tell correctly of a fact that happened thirty years ago, but he can not tell you anything of a fact that happened thirty minutes ago. The patient usually recognizes that he has lost his memory. Recovery is possible in many of these cases by withdrawing all alcohol, building up the patient's health, then patiently teaching him over again all that he has forgotten. The older the patient the more difficult the cure.

There is a form of alcoholic amnesia in which the patient is in a condition of waking trance or automatism. He may carry out complicated professional actions, transfer property, commit crime, take long journeys, and so act that no one notices any disorder in his mental faculties. Then he suddenly grows conscious, and has slight or no recollection whatever of what he did during the trance. There is no question

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of the total lack of memory in many of these cases. Transient alcoholic automatism is related to alcoholic epilepsy. Instances of this trance that last for days and weeks are very rare, but Professor Henry J. Berkley¹ of Johns Hopkins University has seen it last for five months.

Epilepsy is made worse by alcoholism, and it can be caused by alcoholism. The children of alcoholics, who take to drinking, frequently become epileptics. Eight or ten per cent. of all alcoholics have epileptic seizures, ordinarily after a severe debauch. In some cases the attacks are incomplete; there may be spasms of single muscles, or of half the body, and the consciousness may not be totally lost, but there is severe cerebral congestion. Other patients have complete epileptic convulsions. Epilepsy instead of delirium tremens may be the result of an alcoholic debauch; or an epileptic convolution may precede the delirium tremens. The prognosis of alcoholic epilepsy is bad even if alcohol is withheld. Repeated seizures commonly cause death in a short time by cerebral congestion and oedema.

PERIODIC ALCOHOLIC INSANITY, strictly so called, is relatively rare. In a patient that has an hereditary disposition to insanity repeated

¹ *A Treatise on Mental Diseases.* New York. 1900.

attacks of delirium tremens may bring about a periodically recurring insanity instead of persecutory insanity or dementia. These periodic attacks are like delirium tremens, except that the tremor is absent. They recur at intervals of a few weeks or months, with prodromal irritability, long after all alcohol has been withheld. As the attacks are repeated, the lucid intervals lessen. The final dementia is of slow approach. Some patients have stages of persecutory mania before dementia sets in.

It must be remembered that some periodic alcoholic debauches are a symptom of recurrent mania from other causes: the patient is primarily a maniac, and symptomatically only an alcoholic. Many insane persons called dipsomaniacs are not such at all.

DIPSOMANIA is a form of insanity, and it is a very rare disease. The dipsomaniac is usually the child of alcoholics, and is at intervals overwhelmed by an irresistible desire for alcohol to quiet his distress. There is a prodromal period of intense irritability, with insomnia, headache, and great mental anguish. These symptoms are somewhat relieved by alcohol, and when the patient once starts to drink he will take any form of the drug he can get. When whiskey is out of reach he will swallow cologne water, bay rum, the alcohol in lamps, sometimes even

the preserving alcohol on pathological specimens in a medical museum. The condition may persist for days until the patient falls into a deep sleep from which he awakens, weak but quiet; and with no inclination for alcohol until the next attack comes on. The debauch may end in delirium tremens, and then the recovery is slower.

It is very difficult, practically impossible to prove that such a patient is morally responsible for what he does in one of these attacks. All neurologists hold that genuine dipsomania is insanity while the attack is present. As a matter of fact, physical restraint is usually the only means of averting an outbreak. A person that tipples steadily, and has occasional outbreaks into a spree, is not a dipsomaniac: the spree is an effect of the cumulation of toxine, and the patient is an ordinary drunkard.

CYCLOTHYMYIA is another periodic emotional disorder in some drunkards, in which they are alternately depressed (dysthymic), and then excited (hyperthymic). Sometimes this cyclothymia is apparently independent of the alcoholism, and the alcoholism is a consequence of the cyclic psychosis.

Dementia is a terminal stage in all forms of chronic alcoholism, but if the patient starts out with a feeble nervous organism the dementia is

likely to begin early and to be progressive. Not unfrequently in persons between 18 and 25 years of age that are the children of alcoholics, alcoholic dementia sets in and soon becomes absolute. The patient is ever afterward like a mere brute; he has nothing left but the animal instincts, and the bodily functions.

Some chronic alcoholics fall into a pseudoparesis, which can resemble true paresis very closely. In one form are observed mental debility and dullness, with tremor, hallucinations and delusions, especially of marital infidelity, and neuromuscular weakness; but to these symptoms are added the slapping, staggering gait of the paralytic, defects in speech, headache, and apoplectic or epileptic convulsions. Partial recovery is possible in such cases.

A second form resembles true paresis so closely that it is difficult to make a clear differential diagnosis. To the symptoms already described are added an expansive delirium, delusions of grandeur, of great wealth, and the like. Sexual delusions also occur. This expansive mania is followed in a few weeks by dementia, which goes down to total mental annihilation. Neuritis is common in pseudoparesis.

KORSAKOW'S PSYCHOSIS is a condition of delirium in chronic alcoholism combined with a

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polyneuritis, that is, an inflammation of the nerves with the effects of such an inflammation. There is a loss of orientation, of appreciation of time, and of memory, especially memory of recent events. A tendency to garrulousness and to hallucination is noticeable. The disease occurs in middle life or earlier, and is about as frequent in women as in men. At first it sometimes is confused with delirium tremens, but the critical sleep with which delirium tremens characteristically ends is lacking, and the delirium continues.

After a while the hallucinations become less prominent, but the lack of memory, the foolish babbling, and the defective orientation become more evident. Sometimes the first stages are made up of memory lapses with a tendency to fabricate stories to fill in the gaps.

The patient does not recognize friends and he can not attend. In the early stages hallucinations of sight occur at night, but these may extend in intensity, and be present in the day. Optic and tactile hallucinations are the commonest, and they may be like those of delirium tremens. Some patients are excited, others melancholic; they are frequently anxious and irritable; some are merely silly, others are childish. They retain considerable power of reasoning.

The polyneuritis shows the various anæsthesias and hyperæsthesias of other polyneuritides. An ataxic gait is the rule; the pains, sensitiveness to touch, and the muscular weakness of polyneuritis are present. The neuritis is more marked in the legs; and when it is established, atrophy follows. There may be contractions and permanent deformity. In very severe cases the arms are involved, and even several head muscles may be implicated.

The course of the disease is long, and months or years may pass before recovery of health. It is doubtful that complete recovery ever takes place in grave cases, especially as regards the mind. A marked tendency to die of intercurrent diseases is noticeable.

CHAPTER III

ALCOHOLISM AND HEREDITY

One of the chief causes of all forms of insanity is an hereditary predisposition, and this is true particularly of alcoholic insanity. In the Prussian lunatic asylums records are kept of the patient's heredity as regards insanity in general, and in the table¹ below the percentage of heredity for the years between 1884 and 1897, both included, is given as far as this heredity could be learned: these percentages are of ascertained or proven heredity; actually the heredity must be higher.

Percentage of Hereditarily Predisposed.
Males. Females. Both Sexes.

	Males.	Females.	Both Sexes.
1. Simple insanity:			
Patients in general	30.61	32.56	31.7
Patients whose parents were consanguineous	71.30	66.87	69.0
2. Paralytic Insanity:			
Patients in general	18.06	15.86	17.6
Patients whose parents were consanguineous	48.24	40.00	45.3
3. Insanity with Epilepsy:			
Patients in general	25.18	26.23	25.6
Patients whose parents were consanguineous	44.44	64.71	53.2

¹ *Marriage and Disease.* Senator and Kaminer. New York.
1909.

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	Percentage of Hereditarily Predisposed.		
	Males.	Females.	Both Sexes.
4. Imbecility and Idiocy:			
Patients in general	29.02	28.25	28.7
Patients whose parents were consanguineous	47.06	37.62	43.0
5. The 4 forms above combined:			
Patients in general	25.71	25.72	25.9
Patients whose parents were consanguineous	52.76	52.25	52.62

These percentages are derived from 155,516 cases of insanity, of which 83,606 were males, and 71,910 females. In the totals, of those that had simple insanity 47,379 were males and 54,718 females; paralytic insanity, 18,233 males and 4,703 females; insanity with epilepsy, 8,170 males, 5,897 females; imbecility and idiocy, 9,824 males, and 6,592 females. The percentages for this group of 155,516 cases of insanity show that heredity is an element in 25.9 per cent. of insanity in general in patients whose parents are not consanguineously related, and it is an element in 52.62 per cent. of those whose parents are akin: consanguinity doubles the heredity. In special forms of insanity the element of heredity far exceeds 25 and 52 per cent., as is evident from the table. In simple insanity heredity is a factor in at least 69 per cent. of the cases.

Heredity in insanity apparently follows the Mendelian laws, but the entire subject is by no means settled beyond even grave doubt. As Dr. A. B. Macallum says,¹ many scientists

¹ *Canadian Medical Journal*, 1911, I., 1.

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deeply interested in this phase of investigation assume that heredity can be modified by accidental influences much more easily than is believed possible by most biologists. They neglect absolutely the influence of morality, and especially of grace, upon an evil heredity to turn it into what is often harmlessness. There are innumerable excellent citizens that are the sons or daughters of drunkards despite the laws of heredity, but this is not so true where there is downright insanity in the parents: a tendency to insanity is more physical than moral, a tendency to drunkenness is more moral than physical, and the latter is more amenable to control. The mass of fact proving an indubitable Mendelian heredity in many forms of disease is growing constantly. Such heredity has been observed in Friedrich's Ataxia, Progressive Muscular Dystrophy, Amaurotic Family Idiocy, Huntington's Chorea, Stationary Night Blindness, Retinitis Pigmentosa, and other diseases. Pick and Hirschfeld have made a recent study¹ in Germany of the Mendelian laws of heredity in human families, and they showed a number of instances in which the working of these laws was strikingly apparent. These hereditary recurrences relate to purely physical qualities; when a moral element

¹ *Deutsche medizinische Wochenschrift.* Berlin, vol. 38, n. 11.

is introduced the laws are liable to interruption.

There is always a grave danger of overestimating the force of heredity in conditions that involve a moral element. Shakespere said:¹ "This is the excellent foppery of the world, that, when we are sick in fortune,—often the surfeit of our behavior,—we make guilty of our disasters the sun, the moon, and the stars; as if we were villains by necessity; fools by heavenly compulsion; knaves, thieves, and teachers by spherical predominance; drunkards, liars, and adulterers by an enforced obedience of planetary influence; and all that we are evil in, by a divine thrusting on: an admirable evasion of whoremaster man, to lay his goatish disposition to the charge of a star!" To-day this star is heredity, and heredity in moral qualities is as much a will-o'-the-wisp as the star Edmund derides; it can be as foolish and as mythical as the goddess Evolution, which still is worshiped by the rustic, the paganus, among the scientific brethren. Heredity a few years ago was the source of the drama and the novel, but the vogue is changing. The force of environment, the alcoholism of our ancestors, had usurped the whole territory of the old-fashioned will, character, and morality. It is a comfortable doctrine that—if a fellow is a rascal pity

¹ *King Lear*, I., 2.

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him, send him flowers, and abuse his dead grandfather. Roderigo Borgia, one of the great scoundrels of the world, had eight illegitimate children. Juan Borgia, the second son, was assassinated in 1497, and even the family always believed the murderer was Cæsar Borgia, Juan's brother. Cæsar was a worse rascal in some phases of his character than his father. Juan's wife, Maria Enriquez di Luna, was a good woman, and her son Juan, the nephew and grandson of rascals, married Juana, the illegitimate daughter of an illegitimate son of King Ferdinand of Aragon. Juana, the bastard of a bastard, was the mother, and Juan, the son, nephew, and grandson of amazing villains, were the parents of Francis Borgia, the Duke of Grandia, who was a very great saint of God. That is a rather startling breaking across of an evil "moral heredity" despite the dogmatic assertions of certain scientists to the contrary.

There is a report¹ by Professor Karl Pearson and his associates to the effect that alcoholism does not *per se* result in deterioration of the physique and mental powers of the offspring. Sir Victor Horsley and other critics say the evidence Pearson adduces is altogether too slender to support so heavy a burden as this startling and revolutionary view; and the

¹ *Eugenics Laboratory Publications*, 1910, xiii, x.

objection is sound, as we shall show. Nevertheless there is grave exaggeration in the claims of those that find all evil in heredity.

In families that are above poverty when drunkenness appears, the men are the drunkards, the women remain sober as a rule. I know such a family in which there were seven sons and two daughters, and of these the seven sons were chronic alcoholics, but the two women never showed any tendency to alcoholism. In a group of 50 Irish families in Pennsylvania, who were socially above poverty and evil environment, 32 per cent. of the male children in the first American generation were chronic alcoholics, public drunkards, while only 4 per cent. of the women were such; and these women were finally cured; yet the heredity was, of course, necessarily the same for the women as for the men. There were 276 children in this generation, 149 males, and 127 females, a difference of only 8 per cent. in actual numbers, but there were 8 times as many male as female drunkards. There is much more temptation for a man than for a woman to become a drunkard, but not if an inevitable heredity were at work. Drunkenness as a disease is much more a moral than a physical disease, and there is no heredity in morality.

It is, nevertheless, certain that the sins of

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intemperance in a parent can be visited upon the children for many generations. It is equally certain that no sane person must become a drunkard by inheritance, but the children of alcoholics are frequently afflicted physically, they are idiotic or otherwise weak-minded, as a consequence of the parental alcoholism. Legrand examined 215 alcoholic families, and he found 814 members in three generations that were neurotically tainted. Of these 197 were alcoholics, 322 were weak-minded or idiots, 161 stillborn, 37 prematurely born, and 121 died shortly after birth. That is, 496, or 60 per cent. of these children were mentally or otherwise degenerate.

In a series of 1,000 idiotic, weak-minded, and epileptic children in Paris, Bourneville discovered that 620, or 62 per cent. had alcoholic parents; for 38 per cent. of the remaining 480 children he could obtain no history—certainly many of these also had the alcoholic taint. In Normandy, Dahl's investigation showed that from 50 to 60 per cent. of the parents of the idiots he examined were alcoholics. In Norway from 1825 to 1835, following the free distillation of brandy, drunkenness increased until it became a national calamity, and the number of idiots was tripled. The relationship between alcoholism and epilepsy in off-

spring is about the same as that between alcoholism and idiocy.

Sichel studied¹ the subject of alcoholic inheritance in 2,032 insane patients in an asylum at Frankfort a. M., admitted during the year 1907-1908. There was alcoholism in the parents of 308 cases, over 14 per cent. In these 308 cases the alcoholic taint showed itself as chronic alcoholism in 39.9 per cent.; as imbecility and idiocy in 16.4 per cent.; as dementia præcox in 14.3 per cent.; as depressive mania in 3.6 per cent.; as epilepsy in 15.2 per cent.; as hysteria in 7.5 per cent; paralysis, in 4.6 per cent.; senile insanity, 1.6 per cent.; and insanity with alcoholism in 17.2 per cent. In these patients, as is common in all inheritance of insanity, the mental disease resembled that of the parents: two-fifths of these parents were drunkards, and alcoholism showed in another fifth. In this group there were thirteen children under the school age—the children of alcoholics are affected early. The percentage of sterile marriages is very large: among 132 married alcoholic patients there were 22 sterile marriages, without even stillbirths or miscarriages. Of the children 200 perished at birth or soon afterward. Sixty-one per cent. of the parents were paupers.

¹*Journal of the American Medical Association*, December 10, 1910.

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Dr. Müller tells us that in 503 epileptics received in a hospital at Zurich between 1896 and 1907, the alcoholic taint was prominent in 367 cases. In most of these patients the alcoholism was in the grandparents' generation, especially on the mother's side.

Dr. Eugen Schlesinger in 200 weaklings found¹ that 30 per cent. were children of drunkards. In severe intellectual weakness, imbecility, and idiocy, the percentage of alcoholic inheritance was 40 to 60. The low vitality in drunkards' children is traced to the mother especially. Sullivan and Arrivé found that 55 per cent. of the children of alcoholic mothers die either at birth or within two years.

Even occasional drunkenness in parents at the time of generation can produce idiocy. Bezzola in Switzerland studied 70 cases of marked idiocy, and he found that 50 per cent. of these idiots were generated during the wine harvest, New Year's week, and at the Carnival; the times of the year in which the Swiss drink alcoholic liquors to excess. Drunken celebrations of weddings probably thus affect the first-born child, but no adequate investigation of this matter has been made.

Professor Hodge of Clarke University reports that from a pair of alcoholized dogs he

¹ *Münchener medicinische Wochenschrift*, 1912, lix, 649.

got in four litters 23 pups, of which 11 were born dead or inviable, 8 were deformed, and 4 normal; i. e., only 17.4 per cent. were normal. From a pair of dogs to which no alcohol had been given he got 45 pups, of which 41 were normal—90.2 per cent. Demme compared the offspring of ten alcoholic human families with ten non-alcoholic families, and of the children born to the alcoholics only 17 per cent. were normal, while of the non-alcoholic children 88.5 per cent. were normal. These percentages are curiously similar to those found by Hodge with the dogs.

In the State of New York the population in 20 years has increased 53 per cent., but general insanity has grown 97 per cent.: the ratio now is 1 insane person to 340 inhabitants. In a recent study of 941 cases in the Manhattan State Hospital (for the City of New York) 40 per cent. of the men and 25 per cent. of the women were insane from alcohol. Of 22,113 insane patients in France 13 per cent. of the cases were caused by alcoholism.

Of 520 male lunatics at Norristown, Pennsylvania, between April, 1907 and April, 1909, also holism was a chief cause in 46 per cent., and the sole cause in 13.5 per cent. General statistics for some time prove that alcoholism is a causative factor in 28.9 per cent. of the insane in

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New York, and 30.6 per cent. in Massachusetts.

Dr. Clouston, Superintendent of the Royal Edinburgh Asylum, Scotland, reported recently that 42 per cent. of the male, and 18 per cent. of the female insane under his charge were such through alcoholism. Dr. Tuke at Dundee gave a like account. Dr. Theodore B. Hyslop, Superintendent of the London Asylums, Bride-well and Bethlem, thinks that alcohol is the direct or indirect cause of as high as 50 per cent. of all insanity that he sees.

The Asylum of St. Anne in Paris for the 13 years before 1885 found that in 31,773 insane patients, 28 per cent. of the men and less than 6 per cent. of the women owed their condition to alcohol; but in 1900 Dr. Legrain said of the patients in that same institution 51 per cent. of the men and 22 per cent. of the women were alcoholics.

Tilkowski reports that of 14,391 insane in the Viennese Asylum between 1871 and 1882, 25 per cent. of the men showed an alcoholic etiology for their condition. Between 1885 and 1896 the percentage for the same institution had increased to 31 per cent.; and for 1894-1895 it was a little over 40 per cent.

Baer and Laquer give the statistics for Prussia: in the years 1880-1883, the male alcoholics

among the insane were from 30-32 per cent.; in 1886, 35 per cent.; in 1887, 37 per cent.; in 1888, 40 per cent. In the cases of congenital idiocy in Prussia 45.5 per cent. had alcoholic parents. The alcoholics among the Prussian insane are more frequent in the urban patients. In one Berlinean asylum (Herzberg) in 1898-1899, 50.3 per cent. of the men, and 6.2 per cent. of the women were alcoholics; at another Berlinean asylum, Dalldorf, 44.7 per cent. of the males, and 8.4 per cent. of the females. At Dresden 33 per cent. of the male patients were alcoholics between 1890-1900. Kraepelin's clinic in Munich in 1905 had 30.3 per cent. male and 56 female alcoholic insane.

These figures are not exact because they do not differentiate between insanity in general and those forms which are technically called alcoholic insanities. The error, however, is almost certainly toward underestimation rather than exaggeration, because the kin of insane patients do not acknowledge alcoholism as a cause of insanity, unless the truth is unavoidable. Physicians also for the sake of the family conceal the etiology.

Alcoholism apparently causes more insanity relatively among the Irish in North America than in any other race there. Dr. George H.

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Kirby reported ¹ a study of alcoholic insanity in the Manhattan State Hospital, which receives patients from New York City, as regards race. These patients came from one city but from a population 284,882 greater than that of all Ireland, and the hospital is typical of the insane asylums in the chief American centres of population. Dr. Kirby's numbers exclude patients suffering from delirium tremens, and it sifts out the technical alcoholic insanities. In the analysis of 1,762 cases of insanity in the foreign-born patients of both sexes he tabulated the numbers of insane patients who were foreign-born Irish, German, Italian, and Hebrew; also the white and negro patients whose parents were born here; and in another group he placed all the other foreign-born insane. The numbers in his table were:

	Irish	Ger- man	Italian	He- brew	U.S.	Negro	Other Races
Number ad- mitted ..	336	193	123	455	222	90	342
Per cent. Al- coholic In- sanity ..	20	9	5	0.6	5	4	10
Males admit- ted ..	127	110	75	249	118	42	183
Per cent. Al- coholic In- sanity ..	30	12	8	1.2	5	9	15
Females ad- mitted ..	209	83	48	206	104	48	159

¹ *Journal of the American Medical Association*, vol. 57, n. 1, July 1, 1911.

	Irish	Ger- man	Italian	He- brew	U.S.	Negro	Other Races
Per cent. Al- coholic In- sanity	...15	3	0	0	5	0	3

Those in the column marked "U. S." are the children of parents born in the United States.

Dr. Kirby studied another group of 2,127 cases where the races were considered without regard to the place of birth; that is, he included persons of Irish descent as Irish, and so on.

	Irish	Ger- man	Italian	He- brew	U.S.	Negro	Other Races
Number ad- mitted	..560	291	134	455	222	90	375
Per cent. Al- coholic In- sanity	.. 19	10	4	0.6	5	4	10

There were, then, in this study from two to three times more alcoholic insanity properly so called in the Irish than in any other race considered, yet between 1821 and 1900, 22.71 per cent. more Germans than Irish came to the United States. It is difficult to find the causes of this extraordinary excess of alcoholic insanity among the Irish. They are very frequently engaged in the selling of liquor, but so are the Germans; moreover, the relative excess in alcoholic insanity is observed also in the Irish women here (three to five times more than women of other races), who are not in this

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business. The custom of "treating," which is more prevalent among the Irish than any other people may be one cause of their alcoholism, but it does not explain the extraordinary tendency to alcoholic insanity. As the proportion of alcoholic insanity in the Irish at the Manhattan State Hospital is practically the same whether they were born in Ireland or in this country, we can not explain that insanity by attributing it in any marked degree to the American climate, as far as this particular series of cases considered here is concerned: it is racial rather than climatic.¹

Whole nations that are neighbors in the same climate show remarkable and apparently inexplicable differences in average mental characteristics: the German differs from the Celt, the Northern Italian from the Greek; but neighboring nations commonly show great similarity in purely physical qualities. Why then are the Irish apparently more prone to alcoholic insanity than other races?

¹ In America there seems to be a greater tendency also to tuberculosis in the Irish than in other races: in the Sixth Annual Report of the Phipps Institute for Tuberculosis, in Philadelphia, 1912, in a group of 7,985 tuberculous patients 27.7 per cent. were Irish, 20.3 per cent. Hebrew, and 19.8 were German. This hospital is in a Jewish quarter of the city. By Irish in this report are meant patients who were born in Ireland, or whose parents were born in Ireland; if the parents were born here the patients are not classed as Irish. This study is of only one group of 7,985 patients, but it is probably true in general for the white races.

The English consume relatively more alcoholic liquor than the Irish, but the English have less alcoholic insanity. In 1892 the Irish spent per capita £1, 6s., 6d. on spirits, the English spent £1, 9s. The Germans consume relatively more distilled liquor than the English: the per capita consumption in England is 0.88+ of a gallon, in Germany 1.45+ gallons. The per capita annual consumption of alcoholic liquors in general is, however, greater in Great Britain generally than in Germany: in Great Britain it is over 32 gallons, in Germany it is over 28 gallons. In the United States it is now over 22 gallons.

At the close of the eighteenth century the distillation of spirits grew very common in Ireland. In 1729 there were 439,139 gallons of foreign and domestic spirits used, but in 1795, 4,505,447 gallons were consumed. The population in 1731 was 2,010,221; in 1792 it was 4,088,226: the population had doubled, the consumption of alcohol had increased beyond ten-fold. In 1817 Dr. Halloran said he found 33 per cent. of the insane in Cork insane from alcohol; in 1830 Crawford reported that 40 per cent. of the insane in Richmond Asylum in Dublin had alcoholic insanity.

In 1845 there were 15,000 public houses in Ireland for 8,295,061 inhabitants, one to 550 per-

sons; in 1905 there were 24,119 licensed public houses for 4,402,182 inhabitants,¹ one to every 182 persons, men, women, and children. In Dublin with 290,638 inhabitants there were 1,551 public houses; in Belfast, with 349,180 inhabitants, 1,110; in Tralee one for every 80 persons; in Castleisland one for every 30 persons; in the village of Mulloch in Clare one for every 17 persons. New York City for 1910 had 4,766,883 inhabitants, or 384,882 more than the population of Ireland: there were 12,468 liquor licenses in New York City, and 24,119 in Ireland.

Ireland since 1892 spent as an annual average \$72,997,500² for alcoholic liquors, one-third of which went directly into the English exchequer. That money would more than pay the bills for all the public schools, state colleges, and state universities in Wisconsin, Michigan, Mississippi, New Hampshire, Vermont, Maryland, Arkansas, Iowa, Louisiana, Kansas, Texas, and Montana combined, and these states have over 20,000,000 inhabitants. The cost of the entire Japanese army in 1910 was \$55,000,000,—\$18,000,000 less than the Irish liquor bill.

Not a little of the alcoholic insanity among the Irish is an inheritance after a century and a half of very widespread alcoholism in their

¹ *Revenue Returns*, 1905.

² *Financial Relations Commission. Final Report*, p. 183.

ancestry, but this does not explain the excess of Irish alcoholic lunacy when compared with English, as the English nation during the eighteenth century could not be surpassed as bottlemen—"Sou comme un Anglais" is a simile by Rabelais founded on fact. In 1725 when London had 700,000 inhabitants it contained 7,687 dramshops,¹ a shop to every 91 persons, men, women, and children. In St. Giles' every fourth house was a drinking place. From the time of James I. to the end of the eighteenth century, "the dark age of English Protestantism," alcoholism was everywhere prevalent in England. English literature is significantly a blank during that century. Corbyn Morris in his *Observations on Bills of Mortality in London* in 1759, said 80,000 infants died in London in the preceding 20 years owing to alcoholism in the parents. In 1839, an English coroner named Wakeley reported that "There are annually 1,500 inquests in the Western Division of Middlesex, and 900 of the deaths are produced by hard drinking." In 1830 the aggregate sum given to all the British religious institutions put together was sixpence for each inhabitant, but the duties on spirits alone was equivalent to 49 shillings for each inhabitant. In 1850 the annual loss² to England

¹ *Penny Magazine*, 1837, p. 131.

² *Report of the Select Committee on Drunkenness*.

by shipwreck was £2,836,666, and 66 per cent. of this was due to drunkenness in ships' crews. The underwriters at that time deducted five per cent. from insurance rates on all ships that sailed without alcoholic liquor.

Despite all this, the English have not the alcoholic insanity the Irish have. In America the descendants of the English appear to withstand alcohol better than the Irish do as far as insanity is concerned. In the early part of the nineteenth century the descendants of the English in the United States were as hard drinkers as the English at home. About 1824 in the United States drunkenness even among the Protestant ministers was very common. In the Tenth Report of the American Temperance Society, the Rev. Leonard Wood said he knew of 40 drunken ministers in his own neighborhood. In 1804 he saw three ministers taking part in an ordination, and all three were drunk at the time. In 1835 one deacon of a Congregational Church in Boston distributed nearly all of 54,000 gallons of distilled liquors among the natives of the Pacific coast and the Pacific islands. When Cook discovered the Hawaiian Islands they contained about 400,000 inhabitants, but English and American alcohol killed these down to 135,000 in 50 years.

The Irish withstand the climate of the United

States very feebly, and this unfitness is a cause of great neurotic irritation, which leads as one of its effects to alcoholism and alcoholic insanity. The sunstrokes and heat-prostrations that are so common here in summer affect northern Europeans almost exclusively. When an Italian or other southern European is stricken the patient is an infant already suffering from gastric disturbance through bad feeding, or he is a beer-drinking adult.

The foreign-born insane in the United States are mostly northern Europeans. The Irish lead the list: in 1908 there were 6,167 Irish insane (born in Ireland) and of these two-thirds were women. The Germans came next in number to the Irish, with about 45 per cent. of the patients women. Then followed the Scandinavians, then the English. Thirty per cent. of the insane in the United States in 1908 were foreign-born.

In 1908 there were 15,323 foreign-born criminals in American penal institutions. The Italians were the worst—3,114, and two-thirds of them were arrested for grave offenses. The Poles were next, 1,520, with nearly 40 per cent. held for grave offenses. The Irish next, 1,503, with three-fourths of their offenses classed as minor. There is a demonstrable connection between crimes of violence and the season of the

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year in the whole northern hemisphere. The relative percentages of suicides, for example, are always practically this:

	U. States per cent.	Russia per cent.	Europe per cent.	Japan per cent.
Spring and Summer	61	60	59	59
Fall and Winter	39	40	41	41

The homicides seem to follow the same curve, but it has not been plotted. Lynchings and other homicides are especially a summer diversion for Americans. The homicides in Italy (with no capital punishment) are 15 per million inhabitants; in Great Britain 9; in Germany 5; in Russia about 25; in Canada 15; in the United States *one hundred* per million, and twice it went up to 150 per million! This necessarily excludes the hundreds of thousands of abortions that are committed here annually. To have as many murders yearly as we have Germany would need 1,398,068,460 inhabitants, about four times as many people as there are in all Europe.

The climate here, of course, is only one minor factor in causing these homicides; it distributes the percentages geographically, and piles them up in the summer months especially. A few years ago, South Carolina, a state down in the brown belt of the world, with few foreign-born inhabitants, had a murder-rate of 149 per mil-

lion. Again, the relative percentages of the homicides in 1908 was, geographically, .04 per cent. for the North Atlantic states, but 4.3 per cent. for the South Atlantic states; 1.4 for the North Central states, and 9.2 per cent. for the South Central states. It seems to be incorrect to blame the negroes for this difference. In Baltimore in 1911 there were 42 murders, and 35 of these, over 83 per cent., were committed by white men.

The chief cause that makes the United States the Cain of the human family is our law courts, where a quibble over a comma is worth more than the safety of society and all justice. The vast majority of the people here have no religion, but other nations with a low murder-rate are in practically the same condition. In Germany and England if a person commits murder he is promptly and adequately punished; in the United States his picture is printed in the newspapers.

The experience of history proves conclusively that no northern race, as a race or nation, can last in the south. No white colony has ever maintained an existence in the tropics; it must mingle its blood with the dark-skinned natives or be killed off by the climate, and the diseases of the south. Even if modern sanitary science removes the tropical diseases, as it has done at

the Panama Canal Zone, the tropical sun alone will destroy the northern race. There is positively no such thing as acclimatization, except as a slow movement toward the south or north extending over millenniums. Apart from any biblical statement, and considering the subject from a purely scientific point of view, the original man was almost certainly white. He moved south and north, and in the course of thousands of years he acquired the proper quantity of skin-pigment to protect himself from sun and temperature. As he went south he passed from white to brown, and on to black, so that he would be saved from the direct sun, and be able to radiate heat; as he went north he gradually changed from the dark white of the Mediterranean Basin man to the blond, who lives above the fiftieth parallel, relinquishing pigment he did not need, so that he could better bear the cold of winter by radiating less heat from his whiter body. A person of Irish or German descent, whose family for three or four generations has been living in the United States, is not only not acclimated, but he is more unfitted for this climate than a newly arrived immigrant, who has not been subjected to the sun here.

Physicists that work with extraspectral light-rays, Röntgen rays, Becquerel's rays, rays

from radium, and the like emissions, must protect themselves by rubber, lead glass, and other means, or they will be severely burned or suffer other serious damage. There were over twenty physicists killed in the United States alone by the action of the X-ray before methods for protection were devised. Similar rays exist in sunlight. Finsen in Denmark found that skin-pigment can protect animal tissues from the ultra-violet rays of the sun. Therefore, the stronger and more direct the sunlight upon the earth, and the less the relative cloudiness of the sky, the more darkly pigmented the people that live under it. The Eskimos, an apparent exception, are dark as a protection against the sun-glare on the Arctic snow during their day of six months.

Skin-pigment has a relation also to body heat. The blacker an object is the quicker it radiates the heat it receives, the whiter it is the slower it radiates received or stored heat. Arctic animals have white fells for this reason, and northern men are white, the farther north you go the whiter the men are; tropical animals have dark fells, and are nocturnal in habit, tropical men are black. A Sioux Indian in Dakota is white, an Apache in Arizona is black.

Men are differentiated into races, and thrive, develop, and reach physical perfection, within

well-defined climatic areas. As fauna and flora exist and persist as distinct species within certain zones bounded by isotherms, men so exist and persist as distinct races. Nature preserves the race that is best fitted to a given environment, and kills off the unfit.

The natural geographical position for the black man is, roughly, from the equator to the thirtieth parallel of north or south latitude. This line on the north passes through Cairo in Egypt and across the upper part of the Sahara Desert. In America it runs through upper Florida, southern Louisiana, the lowest third of Texas, and northern Mexico.

From the thirtieth to the thirty-fifth parallel is the zone of the brown man, like, say, the Malay. In Europe only the islands of Candia and Cyprus touch the thirty-fifth parallel; but in America the thirty-fifth parallel runs along the southern border of North Carolina and Tennessee, through the middle of Arkansas, New Mexico, Arizona, and the lowest fourth of California. The United States south of North Carolina, then is not fit for the white races to thrive in, and as a matter of fact no white race ever has, or ever will, thrive there. The Norman Frenchman is a success in Canada, in Louisiana he is not. Each 250 feet of altitude is equivalent to a degree of latitude from the equa-

tor, and that is the reason the Spaniard can exist in the neighborhood of the City of Mexico, which is 7,459 feet above the sea. That altitude is equivalent to 30 degrees of latitude, and as Mexico City is at the nineteenth degree of north latitude, its altitude makes it as if it were in the northern United States.

From the thirty-fifth to the forty-fifth parallel of latitude is the zone of the brune Mediterranean type of white man. The forty-fifth parallel passes near Halifax, Bangor in Maine, Ogdensburg in New York, Ottawa in Canada, St. Paul, the lower border of Montana, and the uppermost third of Oregon. In Europe it runs near Bordeaux, Turin, through Bosnia, Roumania, and the Crimea. Madrid, Naples, and Constantinople are north of Philadelphia; New York City is as far south as Naples; Boston and Chicago as Rome; St. Louis as Athens; and Washington City is at the level of French Africa.

The zone of the European blond is above the fiftieth parallel, which in America passes about 100 miles north of the upper boundary of Dakota, Montana, and the State of Washington. Christiania in southern Norway and St. Petersburg are at the level of Mt. St. Elias in Alaska and the southern end of Greenland.

If the United States and Europe are com-

pared as regards exposure to sunlight, great difference is found. The continental territory of the United States, excluding Alaska, has had its present area since 1842, if we omit the negligible Gadsden Purchase. This territory lies between the twenty-fifth and the forty-ninth parallels of latitude. Europe is between the thirty-fifth and seventieth parallels; that is, between the upper border of South Carolina and the extreme northern end of British Columbia and Alaska.

Beside the light-zones, the heat-zones are to be taken into account in a consideration of the effects of climate upon man, but heat is by no means as important as light. The isotherm of 70 degrees Fahrenheit in July which slants from northern Spain somewhat northeasterly through Europe, is altogether above the United States east of the Rocky Mountains; that is, the United States anywhere east of the Divide is hotter in July than northern Spain. Even the 80 degree isotherm, which runs along northern Africa, enters the United States as far north as Maryland and goes northwesterly. The 60 degree July isotherm, which marks the average heat of Great Britain and Scandinavia, in the New World passes through Newfoundland, and up toward the north of British Columbia. Mountainous elevations affect these

isotherms, but this factor is not important here, because the people of the United States are mostly dwellers on plains. As the summer heat is greater than in Europe, the winter cold in America is severer. Above Europe is a partly thawed sea, above America hundreds of miles of ice-covered land. The European mountains lie east and west and cut off the Arctic winds; the American mountains run north and south and let down the cold air.

Ireland lies from 158 to 435 miles north of Dakota; England from 60 to 449 miles north of that state; Scotland from 380 to 657 miles north of it; Norway from 622 to 1,244 miles north of it; Germany from 103 miles south of it to 544 miles north of it; France from 456 miles south of it to 138 miles north of it; Spain lies between the top of North Carolina and the top of Massachusetts; Italy between the top of North Carolina and the top of Maine. A man from the north of Ireland coming to Philadelphia to live moves southward a thousand miles; if he goes to New Orleans he moves southward over 1,700 miles. A Norwegian going to Texas moves south over 2,000 miles, and fifty years ago a large Norwegian colony was actually foolish enough to try this experiment. To-day there is not a single male or female descendant of that colony in existence.

The Lombards went from what is now Hanover and the Altmark of Prussia (and originally, according to their own tradition, from Scandinavia) down to middle Italy; about the level of Boston. All the Lombards, their allies among the Saxons, and the subjected Gepidæ, descended on Italy. Their kingdom in Italy began in 568, and ended in 774; it lasted 206 years. The name alone remains in Italy; the people and their speech disappeared.

The Teutonic Goths, who most probably came originally from the south coast of the Baltic, were very important in the fourth, fifth, and sixth centuries. Ermaneric, the East Goth, ruled from the Danube to the Baltic in the fourth century. In 493 Theoderic, an East Goth, took Ravenna, and soon captured all Italy, Sicily, and Dalmatia. Finally his power extended over a large part of Gaul and nearly the whole of Spain. The Goths were numerous in northern Italy. Theoderic died in 526; Justinian recovered Italy in 555, and the Gothic name died out in Italy. They lasted there 62 years. They lost southern Spain in 534, and by 601 the Gothic language began to go out of use in Spain. In 300 years the race disappeared altogether, but the Hebrew and the Arab thrive in Spain. The Arab, fitted for that climate, flourished for 700 years until he was

driven out; he would be there now if he had been left unmolested.

The Vandals went down from Brandenburg and Pomerania, and by 428 or 429 about 80,000 of them passed over into northern Africa,—at the level of Virginia. By 430 they had captured all Roman Africa except the cities of Carthage, Hippo, and Cirta, and had destroyed Christianity. Nine years later they took Carthage, and they held it 94 years. Genseric built a fleet, and for 30 years his was the leading maritime power on the Mediterranean. He occupied Rome in 455. By 536, that is, one hundred and eight years after they had left Spain, the Vandals disappeared from history, annihilated.

The blond prehomeric Greeks (about 2,000 B.C.) who were Celtic invaders from the north, vanished like these Baltic races in the south. Early in the thirteenth century a body of Burgundians and Germans invaded Greece. Frankish Greece, with its Duchy of Athens, its convents of Italian Franciscans, and the rest, disappeared in 200 years—a Midsummer Night's Dream. Two generations after the conquerors had set foot on the Peloponnesus many of their leading families were extinct. There are ruins of old Frankish castles there now, but nothing more.

A northern man can not thrive in the south. The French lost 15,000 men out of 32,000 in two months trying to retake Haiti from the negro, and at the same time Toussaint l'Ouverture died of cold in a French fortress. Then the English tried to take the island, and were driven out by the climate, as the French had been, after losing 45,000 men. Of every regiment formerly sent to Jamaica four to five hundred died during the first eight months; of a whole regiment once stationed at Fort Augusta, Kingston, there were left only a quartermaster and a corporal.

Sir Francis Drake took the cities of Santo Domingo and Cartagena in 1586, and the climate drove him out. In 1741 the same disaster came again upon the English at Cartagena. In 1780 General Darling captured San Juan with 1,800 men, and then lost 1,420 of these by disease. The Spaniards had a like experience over and over again.

Here we can never get the centre of population lower than Annapolis, in Maryland, simply because the white man can not thrive as a race in the south. The Yankee goes down to Georgia to take charge of a cotton-mill there, and for six months he awakens the sleepers; then he joins them. The Scandinavians of the present day flourish in Alaska, but they die in Illinois;

Chicago is as low as central Italy where the Lombard perished. The mortality of English children is two and a fifth times greater in India than in England, where the English are more exposed to the effects of poverty. The death rate of European children in the tropics is directly proportional to the distance the original home of these children is from the tropics: in Maltese children it is 178; in Spanish, 180; in Italian, 194; in French, 225.2; in German, 273. There is twice as much insanity among American soldiers in the Philippines as at home; Englishmen in India get "Burmah head," with loss of memory and loss of mental concentration. The blonds suffer more than the brunes. What is true of the tropics holds also in a steadily decreasing ratio as we go northward from the tropics.

The races that first settled in the United States came from the north of Europe: they are white men, even blonds; but the sunlight in the United States up to North Carolina is too severe for the white man. Below this level to northern Florida is the brown zone; below that again is the black zone. From South Carolina to near Canada is the zone in light and summer heat for the olive-tinted white man, the Mediterranean type; and this man thrives here fairly well despite the winter, which is much more se-

vere than that of his European home. If, however, a man from Scotland, which has an average of 259 cloudy days in the year, and a very slanting sun, migrates to Yuma, Arizona, which has about 19 cloudy days annually, and a very slightly slanting sun, and sometimes a temperature of 120 degrees Fahrenheit, or to El Paso, Texas, which has about 28 cloudy days in the year, he is stimulated for a short time, then nervously exhausted, and his family degenerates rapidly. Spaniards deteriorate rapidly in Central and South America. The Irish degenerate physically even in the northern United States.

I recently examined 50 Irish families in northern Pennsylvania, who are now in the second American generation. These families were of the best classes that emigrated about the time of the famine of 1847. With two exceptions (where the fathers became drunkards here) they gave their children the best example; they all succeeded financially so that their children were well fed, well housed, and educated: nearly every family was able to send some of its sons to college. In the first American generation there were 5.52 children as the average to each family. If there were a full progression at this rate, these 50 families should now be represented by 1,523 persons. The total, however, in

the second generation will not reach 200 persons, and I am practically certain there was no prevention of conception.

In the first American generation there were 276 children, 149 males, 127 females. Of these, 53 men, over 35 per cent., were chronic alcoholics, public drunkards; 6 of the women also were public drunkards. Twelve of the men, and four of the women became insane.

At the other extreme the Negro is drifting southward to his fit climate. The centre of negro population in 1790 was in Dunwoodie County, Virginia; now it is in Alabama, despite the great exodus of the negro toward the north since the Civil War. The black negro is inclined to remain in the south, the brown Hill Negro comes north.

As we said, the Irish in the United States are more prone to alcoholic insanity than any other race of Europeans, but the cause for this can not be the climate alone, as that acts equally on all northern Europeans; nor is it in the excessive use of distilled spirits, as other races here consume as much as do the Irish of that kind of liquor. One explanation of this tendency to alcoholic insanity that suggests itself is that for the 300 years between 1556 and about the middle of the nineteenth century Ireland was so harried by the English that the entire

Irish race was rendered actually neurotic; then in 1729 they were allowed to distill all the alcoholic liquor they could, and this license lasted for nearly a century: give a neurotic patient easy access to all the whiskey he can consume and the road to lunacy and insane heredity is short.

1. Plantation of Ireland began on a large scale under Queen Mary Tudor in 1556, when Bellingham planted Leix and Offaly.

2. In 1580 nearly all Munster was given over to the "undertakers," and the Irish were driven from their homes.

3. After the Flight of the Earls in 1607 the whole of Ulster was seized and planted by nearly 30,000 undertakers, mostly Scotch Lowlanders. By the time Strafford fell nothing but Connaught was left to the original owners.

4. These undertakers were "Vultures settled upon Ireland."¹ Lecky quotes Stewart, a contemporary, as saying of these undertakers that "Going to Ireland was looked on as a miserable mark of a deplorable person." Lord Clare, another contemporary, called them "A motley crew of adventurers."

5. There were three insurrections during the reign of Elizabeth—Shane O'Neill's in 1560,

¹ Goldwin Smith, *Irish History and Irish Character*, p. 79.

Desmond's in 1567, and Hugh O'Neill's in 1596. Minor uprisings were going on always during the last two decades of the sixteenth century. These three main revolutions were excited by systematic violence or by treachery, and suppressed by wholesale devastation and massacre.¹ Lecky said² "The suppression of the native race in the wars against Shane O'Neill, Desmond, and Tyrone, was carried out with a ferocity which surpassed that of Alva in the Netherlands, and has seldom been exceeded in the pages of history." In Munster the soldiers of Pelham and Ormond killed men, women, children, idiots, the blind; they filled barns with peasants and then fired the barns; they tossed babies from man to man by the points of their pikes. Percie left "Neither corn, nor barn, nor house unburnt between Kinsale and Ross." In 1579 the garrison of Smerwick, which had surrendered, was massacred by Gray in the presence of Sir Walter Raleigh. This Gray murdered 400 persons at Sleughlogher. Sir George Carew³ estimated that in six months of 1582 the English succeeded in starving to death 30,000 people in Munster, *beyond* those killed by the sword. Malbie and Bingham acted in the same

¹ See The State Papers *passim*, Leland, Moryson, and Holinshed.

² *History of England in the 18th Century*, II., p. 95.

³ *Pacata Hibernia*.

manner in Connaught. Lecky says that 3,000 people were starved to death in Tyrone in a few months. Famine was used as a regular weapon to kill off the Irish, and finally Elizabeth reigned quietly over a country of corpses and ashes. In the English State Papers, Reign of Henry VIII, is the following very significant passage: "Also it is a proverbe of olde date, 'The pride of Fraunce, the treson of Inglande, and the warre of Irlande shall never have ende.' Whiche proverbe, touching the warre of Ireland, is like alwaie to continue, without God sette in men's breasts to find some new remedy that never was found before."

In the seventeenth century the plantations, massacres, and confiscations practically never ceased. Elizabeth began the persecution of the Catholics, the "Papist Recusants." Catholics were thrown out of all office and their goods confiscated.

6. In 1641 Owen Roe O'Neill rose in insurrection, and in the suppression of this uprising Coote, St. Leger, and Hamilton acted just like Mountjoy, Carew, and Malbie of the preceding century. Monroe murdered in one day 700 peasants, men, women, and children, all non-combatants. A single regiment of Coote's killed by starvation 7,000 people, and this is his own report. They butchered the babies with pru-

dent foresight because, as they said, "Nits will be lice."

7. Cromwell came in 1649, and "in the Name of Jesus" butchered 30,000 at Drogheda. He did a like deed at Wexford. Sir William Petty¹ estimates that in the eleven years after Owen Roe's uprising the English slaughtered 616,000 persons in Ireland. About 40,000 Irishmen fled to France and Spain. Cromwell confiscated all Ireland except a part of the west, and drove the Irish "To Hell or Connaught" to make room for his undertakers.

8. After two centuries of these blessings of English civilization the Penal Laws were imposed on Ireland, and these laws ground the Irish into the mire of poverty for another century. This poverty was such that Ireland has never been able to rise from it. For even the past 50 years pauperism has been steadily increasing with the exception of the year 1882. Thom's *Official Directory*, for 1903, said that in the preceding year one person in every eleven in Ireland received help from the poor rates. In 1901 there were 321,025 persons receiving outdoor relief in a population of 4,458,775. Scotland has only 377,570 more inhabitants than Ireland, but in 1909 the value of imports into Ireland was \$74,832,000, into

¹ See Lecky, II., 172.

Scotland \$200,596,800; the value of exports from Ireland was \$10,828,800, from Scotland, \$196,555,209. Switzerland has 639,980 less inhabitants than Ireland, and two-thirds of Switzerland is barren mountain: the value of imports into Switzerland was \$325,660,000, and of her exports, \$227,240,000. Denmark had in 1906, 1,796,914 less inhabitants than Ireland, but the value of Denmark's imports was \$195,759,988, and of her exports \$166,574,556. Ireland is larger than Denmark and Switzerland combined; 72 per cent. of Ireland is cultivable land, 75 per cent. of Switzerland and Denmark is mountain, marsh, lake, and heather land.

The facts, gathered at random here, are mere disconnected spots, and not a small fraction of the whole incredible horror of those three centuries, but they explain why the Irish as a race are "nervous," why our drunkards are so prone to alcoholic insanity. In the history of national crime there has been observed elsewhere as bestial a savagery as that exercised by the English in Ireland, but never a savagery of that kind spread uninterruptedly over three hundred years. This seems to me to be the reason why an Irishman that yields to drunkenness is always in danger of insanity: he belongs to a race made neurasthenic by in-

cessant suffering. For the same reason if the Jew drank distilled spirit he would probably show an extraordinary tendency to alcoholic insanity.

Another physical cause of the unusual tendency to insanity in the Irish may be that there has been somewhat more intermarriage of the same stock among the Irish than in other nations, owing to the survival of the clan life down to even the middle of the seventeenth century. Any of the *small* Irish clans, and there were hundreds of these, was really one family in blood; it lived in the same place century after century, and it married its own distant cousins. It was like a Jewish Ghetto in a continental city, self-centered, and it kept its neuroses concentrated. I have observed startling facial and other resemblances in Irishmen of the same clan name, who were not conscious of any kinship whatever.—

Before enumerating other causes of alcoholism, the matter of hereditary idiocy and imbecility should be considered. Imbecility is one of the commonest effects of neuropathic heredity, and the most injurious to human society. In insanity and many of the neuroses physical heredity follows these averages with remarkable constancy.

1. If both parents are neuropathic, i. e., epi-

leptic, choreic, idiotic, imbecile, hysterical, dipso-maniac, *all* the children will be neuropathic.

2. If one parent is normal, but has a neuropathic taint from *one* of his or her parents (i.e., is the child of an insane, epileptic, alcoholic, hysterical, or similarly affected person), and the other parent is actually neuropathic, about half the children will be neuropathic, and half will be normal; but these latter will transmit the neuropathic tendency like the neuropathic children.

3. If both parents are normal at present, but each has a neuropathic taint, from *one* of his or her parents, one-fourth of the children will be normal and will *not* transmit the taint; one-half will be normal and *will* transmit the taint; one-fourth will be neuropathic.

4. If both parents are normal, and one is of untainted normal ancestry, but the other has a neuropathic taint from his or her parents, all the children will be normal; half of these, however, will transmit the neuropathic taint. For example, given a man who is of untainted normal ancestry, who marries a woman that is actually normal, but who had a parent that was a drunkard at the time of her conception: then all the children will remain normal, but half of these will transmit the neuropathic taint to some of the drunkard's great-grandchildren.

A few of these great-grandchildren will be neurasthenics or hysterics, or epileptics, or have a tendency toward alcoholism.

5. If both the parents are normal and of pure normal ancestry, all the children will be normal, and will not transmit a neuropathic taint.

These are Mendelian laws concerning purely material heredity, and these results are now so well confirmed that biologists, when dealing with the lower animals, can foretell for ten or more generations to within a fraction of one per cent. just what the physical characteristics of the generations will be. As alcoholism is one of the chief causes of insanity, and other neuroses, a man who to-day lets himself become an alcoholic and then begets children can surely be the sole cause of insanity or similar neurosis in persons who will be born sixty or more years hence. That a person's father or grandfather was a drunkard does not mean that he *must* become a drunkard, but he must take care or he will readily become one. Hence also the grave importance of looking into the ancestry of the person one intends to marry. A man that marries the daughter or the granddaughter of a drunkard is a criminal fool, although the girl herself may be a very charming lady. His children and grandchildren will dance to

bitter piping. I suppose the girl's father or mother to be a drunkard at the time she was conceived.

Dr. H. H. Goddard, of the Training School for the Feeble-minded, at Vineland, New Jersey, through his "field-workers" traced the history¹ of the family of a girl in that institution back to the time of the Revolutionary War. A healthy soldier in the Continental Army had an illegitimate child by a feeble-minded woman. From the child of this feeble-minded woman there were 480 descendants, and only 46 of these were normal, nine and one-half per cent. That soldier afterward married a healthy woman, and there have been 400 descendants from her, and of these not one was degenerate or feeble-minded.

¹ *Journal of the American Medical Association*, 78:26, p. 2021, June 29, 1912.

CHAPTER IV

IDIOCY, IMBECILITY, AND ALCOHOLISM

Idiocy is a congenital or acquired condition of mental deficiency, which is recognizable in the first few years of infancy. It may be hereditary, or brought about by cerebral injury at birth or immediately after it, or be a result of brain disease in infancy or early childhood. The causation takes place before any considerable development of the brain cells and association nerve-fibres has occurred, and thus the growth of the encephalon is checked.

There are many classifications of idiocy, but the main groups are these four:

1. Absolute idiots, where there is no susceptibility to education of any kind, and the power of attention is only slight and unstable even when excited by loud noises, bright lights, or similar stimulation.

2. Idiots that can speak a few words, who can conduct themselves with a certain degree of decency, but who have little power of attention, and are not capable of education.

3. Idiots that have a fairly developed faculty of attention, and who can be taught to do manual labor; who can apply words in a correct sense, but who can not be taught to read or write.

4. Idiots that approach the condition of the low grade imbecile. They have considerable power of attention, and they can be taught to read or write imperfectly.

Some idiots have small skulls, and are therefore said to be microcephalic; others have an overgrowth of the cranium from hydrocephalus, or over-developed skull-bones or brain substance, and are called macrocephalic. There is a type that has a trunk of the ordinary size, but the legs and arms are dwarfed: those in this class may be cretins with abnormalities of the thyroid gland, or they may be rachitic. Others are paralytic from defects in the brain-substance.

Féré experimented upon eggs containing embryonic chickens with alcohol, and he found that by injecting a few drops of an alcoholic fluid under the shell he could produce monsters almost at will. Ethyl alcohol produced fewer terata than methyl alcohol did. When he injected a physiological salt solution into eggs in the same quantities he produced no monsters. He found also, as was said before, that he could

produce terata merely by exposing eggs to the fumes of alcohol. I am inclined toward the opinion that liquor-dealers who are total abstainers, but who are constantly in the presence of the fumes of alcohol, are injured somewhat physically by the fumes alone, but this is little more than conjecture: I have seen one case where a loss of memory could be traced to the presence of an alcoholic vapor, as was mentioned in treating alcoholic amnesia. Dr. Stockard¹ in a series of experiments upon breeding guinea-pigs subjected to the fumes of alcohol got all the effects upon the offspring that are observed in human beings when alcohol is taken in liquid form.

Although alcoholism in the parents is not the sole cause of idiocy, it is one of the chief causes; and it is often a contributing factor when the predominant agent in effecting idiocy is something else than the parental inebriety. In most neuropathic families when the tendency to degeneracy is unchecked by mental and moral education, and by marriage into families of better nervous organization, idiots are likely to appear shortly before the extinction of the family. This end is hastened very much by alcoholism, and by consanguineous marriages. Syphilis, epilepsy or tuberculosis

¹ *Archives of Internal Medicine*, Chicago, Oct. 1912.

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are not so potent in bringing on idiocy as alcoholism.

Injuries to the infant's head at birth, especially in the case of first born children, is the cause of idiocy next in frequency to alcoholism. After these origins come the ravages of infectious diseases, and the various bacterial inflammations of the meninges of the brain and of the brain itself. There are other less frequent origins of idiocy, which need not be enumerated here, but it is important to remember that the giving of soothing sirups, gin, alcoholic essences of peppermint and anise, digestive elixirs, to allay colic or induce sleep, also are undoubted causes of idiocy.

Microcephalic, or small-headed, idiots are always restless except in the lowest grades. They are hard to control, peevish, given to fits of rage and of causeless screaming. About one-third of them are also epileptics.

Macrocephalic, or big-headed, idiots, on the contrary, are timid, gentle, and quite tractable. They have infantile hands and feet, and walk with great difficulty, if at all. When frightened they utter inarticulate cries, and are calmed with difficulty. Some idiots in this class live to be quite old.

The paralytic idiots are also tractable; and many of them can be taught cleanly habits;

some are able to speak slowly. Cretins are rare in the United States: Osler found only 60 cases, and 47 of these were foreign-born. This form of the disease shows about the second year. The infant grows dull and fat, the skin is yellowish, the mouth is open and driveling. The child is dwarfish, its neck is thick, the limbs are short, the chest big, the nose flat. Most cretins have no atrophy of the thyroid gland; others have goiters. There is some unknown connection between endemic cretinism and the soil: when the land is drained, and the drinking water is made pure, endemic cretinism dies out.

Clark and Atwood in a report¹ on 609 idiots and imbeciles in the Randall's Island Hospital, New York City, say that of 120 adult male idiots and imbeciles, active and paralytic, and 200 females, all, without a single exception, were masturbators.

Imbecility is a defective condition much more important than idiocy. An enormous number of the insane in all countries were at one time in their lives high grade imbeciles. The idiot does not usually procreate; the imbecile does, and commonly his lust is marked. There are degrees of this degeneracy varying from cases that are little more than idiots up

¹*Journal of the American Medical Association*, vol. 78, n. 12, p. 838.

to those that are with difficulty differentiated from the nominal sane person. These grades are not sharply defined, but it is customary to roughly divide imbeciles into three classes: low, medial, and high grade imbeciles: the high-grade imbecile is called a moron (*μωρόν*, foolish). As in idiocy, alcoholism in the ancestry is the commonest cause of imbecility.

The low grade imbecile approaches the idiot, but he is able to understand simple speech. Those in this grade speak some short words, and they frequently have to use signs to make known their wants. They lack the power of attention, and they do not learn to read or write, but they make childish pictures. Usually they are low in stature but sturdy, with coarse features and hands; they commonly have high or flat palate-arches, defective teeth, big, misshapen ears. The eyelids may be like those of a Chinese, and the skull-bones are not seldom imperfectly formed. The head is often small, occasionally very large. Paralysis is somewhat frequently found, and there may be even muscular atrophy. This class of imbecile may be taught to do unskilled manual labor, and he will work if constantly watched. He is uncleanly, usually apathetic, but may be dangerous if teased. Masturbation is common, but there is little or no other sexual tendency.

Such an imbecile does not become insane in the ordinary technical senses of this term; he remains as he is because he is too dull for mental irritation.

The medial grade imbecile can speak, but he has a small vocabulary. Those in this class reason in a very rudimentary manner, and they are extremely ignorant. They often stutter; they sometimes can be taught to read short words, but they can not learn simple addition in arithmetic. Some are cunning. They are all vain, quarrelsome, irritable. They are liars and thieves, and have little or no sense of shame. They will not work steadily at anything. They commonly have rather marked sexual tendencies, and are likely to give scandal in this respect.

They are slow to understand the little they do make out, and they usually repeat the question put to them. If they learn to do anything the method must always be the same; any unusual change disconcerts them. They are very self-important and selfish. Food and ornamental dress are the chief ends of life with them. They will commit crime to get some trivial bit of jewelry, and show no shame or remorse when detected. Cranial deformation is present, but not so constantly as in the low grade imbecile. Their heads often are small-

ish. They show violent transient rage, but they do not develop psychoses.

The high grade imbecile is in the most numerous class. Some of the "backward children" in the schools are high grade imbeciles. One group of high grade imbeciles shows in conversation ordinary intelligence, but they can not be taught anything beyond the rudiments of reading and writing. They never go beyond ordinary addition. Berkley¹ would make arithmetical problems of a simple character the chief test in the diagnosis of this type of imbecile, but this method, in my opinion, must be used with great caution. Very many little children that are not only normal but unusually gifted intellectually find arithmetic the one difficulty in their school-work. There is a physical mathematical "gift," an eye for an equation, similar to the nervous faculty for music, the congenital "musical ear," and both are often present to no small degree in folk that possess nothing else.

There is this type of high grade imbecile which is dull intellectually, and another type with some single well-developed talent standing out oddly from a dead level of stupidity. These latter may be able to converse in two or three languages, but commonly the single tal-

¹ *A Treatise on Mental Diseases.* New York, 1900, p. 525.

ent is for some handicraft. Berkley knew a man in this class that could read and speak English, French, and German, but who spent his time chiefly in beating a bass drum, and was generally like a child of about eight years of age.

The imbecile with cunning and a facility in language is very often a confirmed criminal in all the external manifestations of that notion. He may be a forger, a thief, a sexual pervert. He is the offspring of alcoholic or neurotic parents, and he represents a late stage in the extinction of a family. He has practically no notion of the necessity of a moral code because he does not understand. Sane, responsible persons are very frequently found that seem to lack utterly any "moral sense," but these really do not lack it; they ignore it. The imbecile actually lacks it, because he is not fully rational; his lack is a part of his general obtuseness. The same person who is always a thief, liar, libertine, has passions, will and intellect like the righteous man, but the righteous man's intellect points out to the will what is in accord with the laws of morality, and the will then commands the passions rationally: the sane rascal refuses to exercise his faculties rationally. The imbecile has passions, will, and intellect, but the intellect is so hampered it cannot

differentiate right from wrong, at least when passion is excited, and therefore the blind will is misdirected.

It is erroneous to call the real imbecile a criminal, at least in the broad comprehension of the term, when he takes what does not belong to him, or does other acts that are usually classed as crimes: he may be as irresponsible as an insane man; he is a congenitally insane man, but technically he is not classified as such. This unfortunate degenerate, with a mental condition that is a result of his ancestors' sins, is treated as a formal criminal, is put into reform schools (which never reformed anything) or jails, when he should be confined in special institutions, and treated with marked gentleness.

It is very difficult in certain cases to diagnose imbecility, to differentiate acts done by those in its highest grades from mere malice in responsible, sane persons who set out on the wrong path in childhood. Imbecility at times blends so closely with sanity, and vice versa, that no human judge has a right to pass judgment, except after skilled observation extended over months of time. Yet, although the imbecile may have little or no moral responsibility, it is altogether possible by patient training begun in childhood to keep most of

these from giving scandal. If they can not be educated, most of them can at least be trained. Parents will not believe that an "incorrigible" child may be really an imbecile, and that because there is something amiss in the mental equipment of the parent himself of such a child. I recently saw a girl of ten years of age, the child of a drunken father and a good mother, and this girl after three years of patient teaching can not be made to spell words of four letters: there is something lacking in her brain. She is, nevertheless, a docile, gentle child, because she has been well trained by her mother, and she knows enough to receive the sacraments.

On the other hand, many children called imbeciles by neurologists are really only spoiled children. It is very easy to mistake viciousness for imbecility. For example, D. S., a girl of twelve years of age, was arrested for picking pockets; she was apparently a "congenital criminal." On investigation the authorities found that she had a mother who is a prostitute; the child had congenital syphilis, adenoids, and large tonsils. On removing her from her environment, and treating her medically and surgically, she became normal.

J. S., a boy of fourteen years of age, was expelled from school; he had lied and stolen

as far back as he could remember; he masturbated; he could learn nothing in school; he ate whatever he wanted and as much as he wanted; he visited brothels; he apparently had no appreciation of morality, no standard of right living; he was arrested for thieving. There was, however, no history of alcoholism, insanity, or unusual nervousness in any member of his family. His father was a leading citizen that saw the boy occasionally at meal-time, and paid the bills; his mother was a frivolous, effeminate shirker. The child was merely vicious from lack of training. His weakness in school-work was an effect of physical abuse, and uneducated will. He was a spoiled child, yet he would be classed as a high grade imbecile by a majority of physicians.

Many high grade imbeciles become insane in the ordinary sense of that term. They may develop mania, melancholia, relapsing forms of lunacy, delusional notions that are more or less fixed, or hallucinatory insanity. When mania appears the onset is sudden and in adolescence. The patient is confused in his excitement, and very garrulous. The attack lasts only for a few days or weeks, and he recovers his former imbecile state. There are in typical cases rapid and repeated recurrences of the mania with gradual dulling of the faculties, until

true dementia follows. This dementia is very rapid: in a year or two the patient becomes quiet, and blank forever. Alcoholism in a high grade imbecile is especially likely to bring on this mania with its consequences, and so is the exhaustion of masturbation. When an imbecile has cold, clammy hands, a pale and pinched face, he should be watched with a view to possible masturbation.

Melancholia in imbecility is also rapid in onset; it appears about the time of puberty, and there is the same tendency to final and rapidly developed dementia. Female high grade imbeciles are commonly very much depressed at the time of menstruation. They then may suffer from sexual delusions and excitement. Alcoholism in imbeciles tends to develop delusions and hallucinations; masturbation through exhaustion induces notions of persecution. The brain of an imbecile does not show the lesions found in the cerebrum of the idiot, but the imbecile forebrain usually is not developed beyond the infantile stage; the gyri of the grey matter are abnormal; the grey matter itself is often thin.

Dr. Bowers says¹ of 1,080 criminals in the Indiana State prison 135 are insane. Many physically defective criminals become insane

¹ *Journal of the Indiana State Medical Association*, April 15, 1912.

on confinement, yet the large percentage of insane criminals is due to the fact that weak-minded criminals are not cunning enough to cover up their crimes and to escape the police. Most weak-minded criminals get into jail, only an extremely small percentage of sane criminals are even suspected of crime. This fact is a source of the unscientific talk about criminals and physical degeneracy. If all rascals got their deserts on earth the "degenerate criminal" would be lost in the crowd. He is prominent now because even a detective can catch him. The editor that deals in the second-hand clothing of science, and the physician who was prematurely born into the world of medicine, are continually rediscovering "after a careful review of the subject" that the true criminal is always a physical degenerate. The true, dangerous criminal, the serious menace to society, is never a degenerate; he is no more a degenerate than the ordinary sot is "a good natured poor fellow." They are both vulgar rascals. About 98 per cent. of all this chatter about criminal irresponsibility because of degeneracy is the invention of the same spirit of evil that has started the movement of sterilizing criminals, the sexual education of school children, and eugenics or marriage by the police.

Alcoholism is a source of crime and pauper-

ism to an extent that exceeds its causal influence upon insanity. A crime may be such formally or only materially; and intended homicide by a sane man is a formal crime, the same deed done by an insane man is only materially a crime; objectively, however, the result is the same. As far as the victim is concerned, or society, the material aspect may be the more important one. In the great mass of crime there is an enormous material element, because of ignorance in the criminal. Much of the ignorance is only culpable ignorance, and ignorance of any kind is an evil. A vast deal of the crime, pauperism, and consequent evil in the world is due to culpable ignorance, and no small part of this is the outcome of alcoholism.

Knowledge is not all of righteousness by any means, but it is an ingredient thereof. Virtue, and salvation after the advent of reason, is conditioned to a certain degree on knowledge. There is no virtue, for example, without humility, and humility is fundamentally a knowledge of the truth as regards ourselves. Prudence supposes knowledge; free will, the basal fact in human life, is impossible without knowledge. Truth is conditioned by knowledge. Alcoholism is one of the most potent opponents to knowledge, especially of spiritual knowledge,

society has to contend against among the northern races. It is a chief cause of those brutal crimes that arise from culpable fogging of human reason.

Statistics concerning the connection between crime and alcoholism, and pauperism and alcoholism, are likely to be very erroneous. A man may be an alcoholic because he is primarily a criminal, as well as a criminal because he is an alcoholic; yet a drunken criminal and the statistician both are inclined to make alcoholism the cause. The same is true of pauperism. Nevertheless, it is certain that about one-third, at least, of all crime and all pauperism in the northern nations is due to alcoholism.

The Massachusetts Bureau of Labor Statistics say they found that 84 per cent. of all the criminals in that state were such through alcoholism. This percentage included the prisoners in station-houses, who were drunk and disorderly, but if these prisoners are excluded alcoholism still was the cause of 50.88 per cent., or half of the crimes.

A body of investigators called the Committee of Fifty here in the United States examined the records of 13,402 convicts in 17 prisons scattered through 12 states. They excluded persons committed for mere misde-

meanors, drunkenness, or violation of the liquor laws, and the investigation was made as carefully as possible. The average final percentage reached in regard to alcoholism as the cause of crime was 49.95. This is the same as that found by the Massachusetts Bureau of Labor Statistics.

Dr. William C. Sullivan says he found in the English prisons that about 60 per cent. of the grave homicidal offenses, and about 82 per cent. of the minor crimes of violence were due to alcoholism. In the homicidal cases brought about by alcoholism it was in almost every case chronic. Alcoholic suicide also ordinarily supposes chronic drunkenness.

In Scotland in 1896 of 53,000 persons arrested for minor offenses 75 per cent. were drunk when arrested.

Baer found in 32,837 male and female prisoners in 120 German prisons 41.7 per cent. alcoholics, but some (the number is not given) were not chronic alcoholics. Among the female prisoners 18.1 per cent. were alcoholics, among the males 43.9 per cent. He found that 46.1 per cent. of the murder cases were alcoholics, 63.2 per cent. of the homicides (second degree), and 74.4 of the homicidal assaults.

Loeffler's figures from Vienna (1,159 convicts) are, 58.8 per cent. alcoholics. Maram-

bat reported, at the International Congress at Budapest in 1905, that of 2,950 prisoners in the Prison of St. Pélagie in Paris in 1885, 72 per cent. were alcoholics; of 2,372 in 1899, 66.4 per cent.; of 1,106 in 1905, 68.6 per cent. Of the murders, homicidal assaults, and assaults with bodily injury 83.6 per cent. were caused by alcoholism in one large group. In 1898 this proportion was 88.2 per cent. In 1898 three-fourths of the convicts were old offenders, and of these 78.5 per cent. were alcoholics.

The Massachusetts Bureau of Labor Statistics reported that 39 per cent. of the paupers in the almshouses of that state were brought to their condition by their own alcoholism, and about 10 per cent. by parental alcoholism. The Committee of Fifty found for almshouses throughout the United States a little less than 33 per cent. of the paupers were such through their own alcoholism, and 8.7 per cent. through the alcoholism of parents or guardians.

In cities it is difficult to get at the truth as regards alcoholism in paupers, but in small towns where individuals are widely known the figures run higher than those given above. The percentages for Worcester, Massachusetts, Louisville, Kentucky, Bayonne, New Jersey, and Pawtucket, Rhode Island, ranged from 43.90 to 57.61 per cent. The enormous

number of paupers, such from alcoholism, can be suggested by the fact that New York City in 1908 gave assistance to 375,000 paupers, and 39 per cent. of that number would be 146,250 persons—enough to make a large city.

The Committee of Fifty estimated that annually about 16,000 children are deserted by their parents in the United States. The committee found from the records of organizations like the National Children's Home Society, and societies for the prevention of cruelty to children, that 45 per cent. of the children cared for by these societies were made destitute by alcoholism in the parents.

In England the averages are practically the same. The total cost of poor relief in that country is about \$60,000,000 annually. Of that vast sum about \$23,400,000 is given to paupers made such by alcoholism.

Dr. George Keferstein of Lüneburg reported that the statistics of the city of Osnabrück for 60 years showed that 56 per cent. of all its paupers were such through alcoholism. The city of Geneva says that 90 per cent. of its paupers are such through alcoholism. Of the 44,539 men in the German labor colonies between 1882 and 1891, 77 per cent. owed their condition directly or indirectly to alcohol. The German investigators Putter, Baer, Laquer, and others,

claim that about one-third of the German pauperism is alcoholic. Their conclusion agrees with the Massachusetts figures. The German statisticians maintain that alcoholic pauperism costs Germany \$12,500,000 annually. Germany, however, spends yearly on alcoholic liquors three times as much as she does on her army and navy, and seven times the cost of her public schools. Like figures hold true for all the great nations, yet this squandering is never estimated in the discussions of "the high cost of living." Even Ireland, as was said before, with 384,882 less inhabitants than are within the corporate limits of the City of New York, has an annual liquor bill of \$72,997,500; and significantly, one person in every thirteen in Ireland is receiving aid from the poor-rates, is a pauper. The City of New York spends annually \$2,412,000 at present for the arrest and maintenance of drunkards, and effects no good whatever by this expenditure. The United States consumed in 1910, 2,035,427,018 gallons of alcoholic liquor; Germany, 1,872,358,000 gallons; Great Britain in 1909, 1,452,599,200 gallons; and France, 1,400,000,000. Great Britain spent for intoxicants in 1911 about \$800,000,000.¹ She spends on alcoholic liquor every year enough money to pay the entire cost of

¹ Report of the United Kingdom Alliance.

maintenance and building for the year 1912 of the combined navies of England, the United States, Germany, France, Italy, Russia, Austria, and Japan, and leave untouched over \$66,458,431. The United States consumes nearly twice as much alcoholic liquor as England. In 1911 our liquor bill (not the money invested in the liquor business, but the money spent for drink), as estimated by *The American Grocer*, was \$1,568,470,514. This is one and a half times our whole national debt. We could pay for the Panama Canal three times over by what we spend for liquor in a single year.

Beside the tendency toward alcoholism that has a quality of heredity in it, there is an occupational tendency. An analysis of the business of 10,636 male alcoholics in Bellevue Hospital, New York City, shows that in occupations in which there is mental strain, irregular hours, and excitement, there are more alcoholics than in work that is quiet and regular. Journalists, actors, and physicians are more given to drunkenness than lawyers, civil engineers, and other professional men. At another extreme, marked monotony in work appears to direct men toward alcoholism—bookkeepers, accountants, clerks, for example. Men that must endure great heat, as stokers, metal mold-

ers, and the like, and men exposed to the weather, as hackmen, postmen, and teamsters, also become drunkards readily. Liquor-dealers, barkeepers, and waiters form a large group of alcoholics. Among female drunkards, laundresses and cooks are in the majority, where a definite business is given.

A common cause of alcoholism is that uneducated and half-educated men in the smaller cities and towns lack means of occupying their time after working hours, and they go to "saloons" for companionship. They take no interest in books; they have no hobby; the long winter evenings drag, and they go out to the dramshop to meet friends. The ordinary professional man and business man is also uneducated, and has commonly little more interest in books, or other methods of driving off ennui, than the laborer has; he too is likely to spend the evenings in the back room of the dramshop, in the beer room of a club, or at a card game. A miner, a mill-worker, and the like, after toiling monotonously day in and day out, in the dark, or in the roar of machinery, goes home to a chill, dimly lit house, and a neurotic and irritated family, to an overworked whining wife and squalling children, and he quickly escapes to the only place he can find light and an appearance of cheerfulness—the saloon. Parish

halls, workmen's and boys' clubs, parish dances, and censored moving picture shows are a natural remedy for this condition as far as the workman is concerned.

Contrary to the general opinion, drunkenness is very likely to begin at an early age. When women become drunkards 17.2 per cent. of these begin before the twenty-eighth year. Dr. Alexander Lambert tabulated 259 male and female cases from Bellevue Hospital where the age at which alcoholism had begun was known, and 68 per cent. of the cases began before the twenty-first year. Only eight cases in the 259 began to drink after the thirtieth year. False notions of manliness are accountable for most of the juvenile drinking. The fact that 68 per cent. of the group of 259 cases began to be alcoholics before the twenty-first year shows the enormous importance of the boys' and girls' temperance societies. All boys should be persuaded to take the pledge of total abstinence up to their twenty-first year.

Alcohol is especially injurious to children. A. and F. Lippmann of Berlin say¹ that the brain of children accustomed to alcoholic drink is 8.12 per cent. too small in all diameters, and that these children are 40 per cent. under weight. Small doses of beer and wine

¹ *Marriage and Disease*. Senator and Kaminer. New York, 1905.

produce in children many morbid effects: dyspepsia with marked swelling of the liver, fatness, and severe nervous symptoms. The Lippmanns report that an eight-year-old child, who had been taking for some time two glasses of wine at midday, and a glass of beer and one of wine in the evening, developed in pneumonia a typical outbreak of delirium tremens. Another child of seven from a like quantity of alcoholic drink developed fatal delirium tremens. A third child had an enlargement of the liver such that this organ filled half of the abdominal cavity.

The legislative opposition to alcoholism takes as its chief forms, high license, prohibition, and commitment to public or private institutions for treatment under restraint. The trial of high license failed so completely to make any headway against the evil that it has dropped out of sight, except as a means to raise revenue. Prohibition has never been put into effect for any length of time. The unmarked package from a neighboring county or state, the patent medicine "tonic," the "speak easy," a venal police, corrupt judges, and indifferent respectable citizens soon make prohibitory laws a cynical farce. At a recent election of a candidate for Congress in Philadelphia there were 23,196 votes cast and the Prohibitionist candi-

date received 144 of these (76 in one ward—presumably his own): this is the usual popularity of the Prohibitionist in the cities of the United States. The State of Kansas, however, lately is enforcing a prohibition law with considerable vigor. In 1904 the commitments to insane asylums in that state were 56.2 to the 100,000 inhabitants; in 1910 they were 42.3; in 1911, 38.3. This notable decrease in the number of the insane, which is directly contrary to the reports from other states, is apparently inexplicable except through connection with the suppression of the sale of alcoholic liquor. In 1909 all the United States except Pennsylvania, Wyoming, Idaho, Utah, Nevada, and Arizona, had partial or complete prohibition by law, but the sale of alcoholic liquors doubled in twelve years.

Physicians that call chronic alcoholism a physical disease solely, have not proved the truth of their diagnosis by curing the physical disease through physical means, and the many recoveries show that it is not an incurable condition. The law-judges that attack drunkenness entirely as a crime do not restore order, even vindictively, by throwing the drunk and disorderly into jails. The clergyman that treats drunkenness, after it has been fixed in a man's body and soul, by moral harangues

fails much oftener than he succeeds. Chronic alcoholism, with few and rare exceptions, is a deordination that is partly moral and partly physical, and it must be treated practically by means that always keep these two factors in view. Treating a drunkard with drugs solely is quackery; giving the pledge as a remedy is often an incitement to perjury. A woman, a chronic alcoholic, recently came to a New York clergyman to have the pledge administered to her solemnly and religiously. The priest asked her:

"For how long do you want to take this pledge—six months—a year—or for life?"

"Oh, make it for life, Father!" she said. "I always take it for life."

To succeed in curing a confirmed alcoholic, who wishes to be cured, it is necessary to put him in a hospital or similar institution for the first stage of the treatment. If we wish to "straighten up" a drunkard against his will he must, of course, be put under physical restraint. Even in the large cities, there are very few hospitals that will take in a chronic alcoholic for treatment, because special pavilions are needed. If the patient is poor he must go to the work-house ward; if he is not, he must pay at the least twenty-five dollars a week to the hospital, and physician's fees be-

side. After about two or three weeks the patient leaves the hospital to begin the alcoholic process over again.

As conditions now are in the United States, pavilions or departments in hospitals, wherein the patients pay a fee to the hospital, are merely places where drunkards that have money go, not to reform, but to have their nervous irritation partly quieted, to keep off the street and avoid gossip. The hospital authorities give whiskey to these patients, but little or no medical treatment, except where there is actual delirium tremens. Such pavilions are respectable "speak easies," which are never raided by the police because no one has ever directed the attention of the police to them.

Perhaps 90 per cent. of the patients in these speak easies have no wish whatever to cease drinking; rather they come in to be fitted up for another spree. They are a regular and a large source of revenue to the hospitals. If they were treated by physicians thoroughly and honestly they would not come back, and the hospital would lose the revenue. These hospitals are panderers to the respectable sot who wishes to protect himself from the tongue of gossip.

All patented secret cures for drunkenness

are fraudulent. Some are effective with a few cases through suggestion, not through the chloride of gold and similar drugs used as substitutes for alcohol; some substitute disguised alcohol for the evident whiskey and effect nothing; others substitute even morphine for the stimulation of alcohol, and this last devil is worse than the first.

For about fifty years past there has been considerable discussion of plans for the treatment of chronic alcoholics in private or state institutions, wherein drunkards might commit themselves voluntarily, but from which after this commitment they could not depart until discharged; or to which magistrates might sentence confirmed inebriates for treatment. The first legislation on this matter was the Inebriates Act of 1879 in England. An attempt was then made to pass an act for voluntary commitment, and another for compulsory commitment. The first was passed, the latter was rejected. In 1898 an English law was enacted which provided for the detention in inebriate asylums of such persons as commit crimes caused wholly or in part by alcoholism, and of persons that had been convicted of drunkenness three times within a year.

In England under the law of 1879, twenty-two private licensed institutions were estab-

lished, and about twenty of these have continued in operation for thirty years. Seven thousand five hundred patients have entered these institutions "voluntarily," but most of these so-called voluntary entrances were the result of much urging by relatives and friends. Of 500 patients treated in Lady Somerset's Retreat at Duxhurst from 1903 to 1908 only 20 came without urging. Lady Somerset superintends the institution founded by herself, and she uses occupation, relaxation, and religious influence, as additional means in the cure of her patients. She sends rebellious subjects to the state farms. In a letter to Dr. Daniel Crosby of Oakland, California, in March, 1911, she said she receives no patient for less than one year; and she adds, "Our medical man reckons that taking the sixteen years over, and calculating only at two years, we have about 60 per cent. of cures." Two years, however, is too short a time to constitute a cure.

Dr. Crosby says¹ that under the English act of 1898 (the compulsory commitment act) fourteen institutions were established, but the number of reformable persons sent to these houses was much less than had been expected. After twenty-one months' trial it was found necessary to establish special institutions for refractory

¹ *Jour. of the Amer. Medical Ass'n.*, 77:22.

patients. He says the principal difficulties confronting those that were seeking the cure of alcoholics in England are:

1. Popular indifference and unbelief; 2. the presence of institutions managed by inadequately endowed charitable organizations; 3. an absence of police-control in the retreats established (refractory patients were perforce discharged); 4. lack of trained assistants in the institutions (this, Lady Somerset says, is one of the worst weaknesses of the plan); 5. imperfect classification of cases (many are called inebriates who are primarily habitual criminals); 6. lack of practical knowledge as to the time necessary for the treatment of curable patients; 7. lack of a definite system of identification and parole.

In America attempts at legislation of this kind have been made in several states, but with no real success. Inebriates have been put into insane asylums; political control in the appointment of governing boards excludes fit persons; there are no trained staffs; the commitments are too short; there is lack of occupation for the patients by which they might earn money for themselves and their families; and so on. Voluntary patients prefer the private to the state institutions but the private institution is commonly inefficient in treatment, and lax in

supervision. Physicians of experience in this matter are not in favor of the private institution.

New York City now has a law that provides for a proper system of identification and parole, and for sentences for relapsing drunkards under parole regulations, and on the undetermined sentence plan. Relapsing offenders may be sent to the state farm for as long as three years, and be recommitted on release as necessary. This plan is, however, largely on paper at present (1912), but will probably be put into effect soon. The governing board has been well chosen.

CHAPTER V

THE PHYSICAL TREATMENT OF ALCOHOLISM

The beginning of the treatment of any form of alcoholism is medical. To exhort a drunkard morally before making any attempt to remove the irritating and overwhelming alcoholic poison from his body is as practical as praying before a wooden idol. The most one can do is to persuade the drunkard to accept medical treatment. After the work of a competent physician has temporarily allayed the craving for alcohol, then one may begin the moral treatment.

Patients that are already in some stage of delirium tremens, or who show symptoms of other forms of alcoholic insanity, require special treatment. The ordinary chronic alcoholics, who are not in the delirium stage, no matter what class they are in of those enumerated below, in chapter IX., among the continual or periodic drinkers (except the genuine dipsomaniac), require the same medical treatment as a common rule.

The first medical treatment to be given to chronic alcoholics should be similar in the main

outline to that described by Professor Alexander Lambert,¹ a physician of very wide experience in this matter in Bellevue Hospital, New York City. He uses a belladonna mixture, consisting of two parts of a 15 per cent. tincture of belladonna, and one part each of the fluid extract of hyoscyamus and xanthoxylum. This belladonna mixture, with repeated and strong catharsis, is essential in the treatment. The tincture of belladonna must be a 15 per cent. tincture; a 10 or 12 per cent. tincture will not remove the craving so thoroughly. It is to be kept well corked, and it is to be shaken before administration. This mixture is pushed until the physiologic tolerance for the belladonna is passed, which is known by such symptoms as dilated pupils, dry throat, redness of the skin, a peculiar incisive voice, and insistence on one or two subjects of speech. Then the dose is reduced or discontinued until these symptoms subside, when the mixture is given again at a reduced dosage. The tolerance varies with different patients: some can take only 2 to 4 drops hourly, others tolerate 18 to 20 easily. Atropine (here in the belladonna mixture) is one of the most useful vasomotor stimulants we have in collapse. It stimulates the circulation by tightening up the relaxed ar-

¹ *Jour. of the American Med. Association*, September 25, 1909, and February 18, 1911.

terial tension; it also reduces congestion, inflammation, everywhere, and it increases intestinal peristalsis. *Hyoscyamus* acts like the belladonna, but it is also calmative and hypnotic. *Xanthoxylum* tends to correct relaxed arterial tension; it is also diaphoretic and diuretic.

The patient is given five compound cathartic pills, five grains of blue mass, and six drops (drops not minims) of the belladonna mixture as a first dose. If there is no purging a saline is added. The dose of the belladonna mixture is repeated every hour of the day, and every hour of the night. At the end of six hours the dosage is increased by two drops; and every sixth hour thereafter an additional two drops are added to the dose until the patient is taking 16 drops at a dose. This is the maximum average dose, and it is kept up unless the symptoms of belladonna poisoning begin to show as enumerated above.

Twelve hours after the first dose has been given, again three to five compound cathartic pills and five grains of blue mass are administered, and a saline if necessary; and these pills, the blue mass, and the saline (6 or 8 hours later if necessary) are repeated at the twenty-fourth and the thirty-sixth hours. At this time clay-colored stools will appear, and some form of

ox-gall may be used, to stimulate further biliary secretion, in small doses every hour for five or six doses. At the forty-fourth or forty-fifth hour two ounces of castor oil are given. The belladonna mixture is kept up every hour in the meantime.

If the compound cathartic pills are not acting promptly and energetically, five or six "B. B." pills are used from two to three hours after the compound cathartic pills. The "B. B." pills are the *Pilulae Catharticae Vegetabilis* of the *Pharmacopœia*, with 1-10 grain oleoresin of capsicum, 1-2 grain ginger, and 1-25 minim of croton oil added to each pill. These pills are to be freshly made. Sometimes it is necessary to carry over the treatment to the forty-eighth and on to the sixtieth hour.

Elderly or very nervous patients, who have been drinking deeply for a long debauch, need two ounces of whiskey for four or five doses during the first twenty-four hours. If these patients are excessively nervous they are to be put asleep by a hypnotic. Lambert uses a mixture of chloral hydrate, grains xx; morphine, grain 1-8; tincture of hyoscyamus, 1-2 drachm; ginger, x minims; capsicum, v minims; and water, 1-2 ounce. They should have cardiac stimulants, like digitalis, after the first twenty-four hours, or earlier if they are weak.

When a patient has an alcoholic gastritis and can not retain the medicine, he should receive five grains of pulvis morphinæ compositus with five grains of sodium bicarbonate every two hours, for two or three doses, to allay the vomiting.

After the craving for alcohol has been quieted by this energetic treatment, one of the greatest difficulties is to convince the patient that he may not ever afterward, as long as he lives, take a single glass of alcoholic liquor. If he does, he will almost certainly go back to his vomit. It commonly requires one or two relapses to prove to such persons that their boasted will-power, as far as keeping from relapse after tasting liquor is concerned, is a grossly unfounded boast. Even his medicine must not contain alcohol.

Dr. Lambert reports¹ that of 85 patients treated by this method in the wards of Bellevue Hospital 21.2 per cent. remained abstinent after 18 months but 78.8 reverted to drunkenness. Of 375 alcoholic patients who voluntarily came to a private hospital for this treatment 87.8 per cent. still remain sober, and only 12.2 per cent. relapsed. This is a striking example of the force of mere natural will in the cure of alcoholism.

¹ *Boston Med. and Surg. Journal*, 166:17.

Delirium Tremens is treated symptomatically, and there is considerable diversity of opinion among skilled physicians as regards some important parts of this treatment, especially as to the use of various sedatives, heart stimulants, and alcohol. Many of these patients have had little food and much alcohol before the outbreak, consequently some physicians deem it necessary to use alcohol for a while to prevent collapse, until the substituted food and stimulation begin to be effective. Dr. Lambert, who holds the contrary opinion, says it is his own belief, "after trying both methods, basing his judgment on the treatment of several thousand patients by each, that alcohol should be absolutely withdrawn in all cases."

Dr. Ranson, in a report¹ on the treatment of 500 cases of delirium tremens in the Cook County Hospital, Chicago, from 1905 to 1908, used whiskey in 110 cases of incipient delirium tremens, and delirium followed in 28.1 per cent. of the cases; he withdrew whiskey in 236 incipient cases, and delirium followed in 48.3 per cent. This gives a percentage of 20.2 in favor of the use of alcohol, as far as the averting of delirium is concerned. To the delirious patients, however, he gave whiskey in 131 cases, and the mortality was 44.7 per cent.; he with-

¹ *Jour. American Med. Association*, 52:16.

drew it in 170 cases, and the mortality was 42.9 per cent. That is, 1.8 per cent. in favor of the withdrawal. The mortality in these delirious cases, from other data he gives, can not clearly be connected with either the use or disuse of whiskey in the treatment.

Lambert's mortality was about 20 per cent. in 709 cases, with 48.8 per cent. in the pneumonia cases; Ranson's was 43.8. As Lambert's results were twice as good as Ranson's, this lends much weight to Lambert's opinion as to treatment in general. When Ranson used scopolamin on his delirious patients the mortality increased 13 per cent., when he used the fluid extract of ergot, in drachm doses every four hours, the mortality decreased 21.6 per cent.

The delirium tremens patient's heart-muscle is nearly always defective and it requires stimulation. Some physicians use caffeine in such a condition, but there appears to be an incompatibility between alcohol and caffeine. Dr. J. D. Pilcher of Cleveland says¹ that alcohol narcosis is lessened somewhat when combined with small or moderate doses of caffeine; intensified when moderate doses of alcohol are combined with large doses of caffeine; or large doses of alcohol with caffeine in all doses. The two drugs are always syner-

¹ *Jour. of Pharmacology and Experimental Therapeutics*, Baltimore, 3:3.

gistic, and the fatality is greater when they are used together, than when given separately. Alcohol increases the toxicity of caffeine, but caffeine does not increase the toxicity of alcohol. The death is cardiac. With somewhat large doses of alcohol moderate doses of caffeine may do good, but extreme caution is required in the use of caffeine in any heart lesion where other drugs are exhibited. It seems to be safer to use digitalis internally as a heart-stimulant; and if the patient will not take medicine by the mouth, or if there is danger of accumulation of the digitalis in the stomach because of the diseased mucosa, digitalin may be substituted hypodermically—1-20 of a grain at a dose. Some writers now call this "the old digitalis treatment," as if it were obsolete, but men among the most practical and successful practitioners still keep to it.

A half-drachm of aromatic spirit of ammonia should be given every two hours as the whiskey is withdrawn. A mixture, in drachm doses, of tincture of nux vomica, a half ounce; aromatic spirit of ammonia, an ounce; fluid extract of ergot, a half-ounce; tincture of capsicum, a drachm; and infusion of calumba, up to seven ounces, should also be used. It is best given in ginger ale. This is a heart-stimulant, and a substitute for digitalis and whiskey.

Ergot is very useful to lessen congestion and to tone up tension. It should be employed hypodermically in addition to the mixture just described. Livingston's solution is a drachm of solid extract of ergot dissolved in an ounce of sterile water, to this three drops of chloroform and three grains of chlorotone are added, and the solution is filtered. Twenty-five c.c. of this is given, every fifth hour, straight into the gluteal or the deltoid muscle. Ergot is especially useful in cases where there is a tendency to wet brain. The ergot also lessens the need for hypnotics.

The patient should have normal salt enemata at a temperature of 115 degrees Fahrenheit, high up into the colon, every fourth hour, and an ounce of magnesium sulphate daily. This is to purge out the toxine as much as possible; he must, for the same reason, receive eight ounces of water every hour. Milk with lime water, and broths seasoned with capsicum, are to be fed him frequently; and if he will not take this food and the water they are to be poured into his stomach forcibly through a rubber tube passed through his nostril. Delirium tremens is essentially a collapse delirium, and the main treatment requires food and sleep.

Every day the patient should get a bath at 95 to 97 degrees Fahrenheit for 40 or 50 min-

utes: this will require the service of two orderlies. During delirium a nurse should, if possible, stay with the patient to keep him in bed. If the nurse is not available, restraining sheets may be used, but no canvas jacket should be put on him. Windows must be guarded or the patient may jump out. During the delirious stage the patient should not be let loose in a padded room. It is better to keep him in an open ward with other alcoholics, rather than to isolate him. He can thus be better watched. If the other patients are delirious he does not bother them; if they are not he is an excellent object-lesson.

Bromides are worse than useless. If veronal in 20 grain doses does not induce sleep, a drachm dose of paraldehyde may be tried, despite its tendency to irritate the stomach. Chloral sometimes brings on quiet in delirium tremens, but it often fails even when used in large doses. If it is used, the heart must be stimulated simultaneously. If there is reason to suspect a fatty or weak heart it should not be used at all. In young strong subjects with good hearts sometimes hyoscine hydrobromate, 1-125 grain, with morphine 1-8 grain, may be tried; but these drugs should never be administered to an aged alcoholic.

When there is wet brain the mortality is

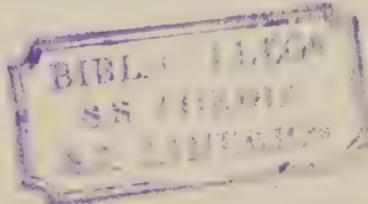
likely to be high, but the ergot used hypodermically does most good in such cases. Five or six weeks may be required before there is definite amelioration in this condition, and this fact is to be remembered lest the physician grow discouraged.

Wet brain may develop in a chronic alcoholic without delirium tremens. The cerebral vessels degenerate and grow leaky, the vasomotor system is inactive, and the heart is feeble. After delirium tremens the wet brain case shows signs of gradual comatose sinking. The delirium becomes low, muttering, and there is evidence of some hallucination of sight and hearing. If roused the patient will take food in the first stages. The cornea and conjunctiva may inflame. The skin is hyperæsthetic, and pressure on muscles causes pain. If the coma grows profound, the arms, legs, and neck stiffen, and the reflexes are all exaggerated. The neck may be drawn backward somewhat, and attempts to move it cause pain. The belly is retracted, the eyes are closed, the pupils small. The tongue is dry and brown, and there is usually incontinence of urine and faeces. The pulse is frequent and feeble, and the hands and feet are chilled. The patient may die in this condition, or gradually begin to convalesce. Pneumonia, with a high mor-

tality, is liable to complicate the condition. A very stiff neck is a decidedly grave prognostic sign.

Acute alcoholic hallucinosis, called also acute alcoholic paranoia, or acute alcoholic persecutory insanity, is closely allied to delirium tremens. The subjects are commonly younger than the delirium tremens cases, and from a better educated class; professional men frequently. In this disease the hallucinations are rather aural than optic or tactile, in delirium tremens the contrary is the rule; in hallucinosis orientation is retained, in delirium tremens it is lost; in hallucinosis the morbid occurrences are systematized, and the patient has his illusions in connection with his social relations, in delirium tremens they are not systematized, and they refer only to the patient himself. The man in hallucinosis retains much more of his wits than the delirium tremens patient.

The prognosis as regards life is good in hallucinosis if the patient is put into an asylum, and kept there for a sufficient time; but as all public insane asylums are overcrowded, as soon as a patient becomes at all rational he is discharged, and he relapses. The tendency to suicide must always be remembered in such cases. These patients have a bad neurotic



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diathesis, and one glass of whiskey may start up immeasurable trouble. I knew a clergyman in this condition to cut his throat with a razor in a station-house cell. The actual treatment is like that for acute insanity combined with the treatment for delirium tremens. These patients should be confined to an asylum, as they are likely to be homicidal if the notion of persecution becomes fixed on any particular person.

CHAPTER VI

INTEMPERANCE AND FREE WILL

Intemperance is the vice that exceeds the measure of reason in the pleasures of taste and touch; it is opposed to Temperance, the cardinal or principal virtue that moderates our concupiscent appetites in what most pleases them. Abstinence, sobriety, and chastity, are the integral parts of temperance; their opposing vices, gluttony, drunkenness, and unchastity, make up intemperance. Numerous related virtues and vices are grouped under temperance and intemperance: continence, meekness, clemency, humility, modesty, studiousness (as opposed to curiosity), courtesy, silence, simplicity, and economy, are the chief subdivisions of temperance; and incontinence, anger, cruelty, immodesty, pride, curiosity, scurrility (obscene speech), contumely, gaming, ostentation, and wasting, are phases of intemperance. Saint Thomas calls mental dullness, foolish mirth, garrulousness, scurrility, and uncleanness the “five daughters of gluttony.”

Popular speech limits temperance to a con-

dition opposed to drunkenness; makes it solely a synonym of sobriety, although sobriety is only one of the numerous aspects of temperance. Temperance, moreover, commonly signifies a contrariety to alcoholism alone; the term is seldom extended to efforts directed against the use of narcotics, or to those that check lewdness. No one but a moralist thinks to associate meekness, humility, simplicity, and similar virtues, with temperance. The fact that temperance is not studied as a complexus of virtues that neutralize a group of vices, is the commonest cause of failure in efforts to arrest the evils of intemperance. Attacking solely the use of alcohol in a drunkard is like trying to cure typhoid fever with headache powders. There is headache in typhoid fever, but there is much more. The abuse of alcohol by an inebriate is only one symptom in a group that conjointly make up the vice of intemperance.

In every virtue that is classified under temperance there is a notion of restraint, control; and as all virtues are means between extremes, temperance lies midway between Insensibility, or excessive indifference to what is necessary for the life of the human individual and the human race, and Intemperance, or the excessive use of these necessary goods. Temperance deals with pleasures that are common to

man and the brute; and as the glory and beauty of any virtue consist chiefly in its degree of conformity with reason, temperance is an extremely noble virtue since it especially keeps man within the bounds of reason, the very position that differentiates him from the brute. One of the chief evils of intemperance is its tendency to bestiality, its surrender to the brutal element in human nature. All virtues moderate, but temperance moderates just those acts wherein immoderation is especially base—namely the appetites for food and drink, which conserve the individual human being, and the appetite toward reproduction, which conserves the human race.

In the physical order, the two appetites mentioned here have each a double effect: one primary, which is in the Creator's purpose the necessary end for which the act is done; the other secondary, which is in the intention of God the means for moving man toward the act, or the inciting motive, namely, the pleasure accompanying the performance of the act. God, then, wishes man, in the moral order, or the order of intention, to observe the precedence of these effects as He established it; and only under such a condition can the acts of man be referred to his final end. That is, man must perform an act for the proper end toward

which by its nature it tends or the *finis operis*, which is, as far as temperance is concerned, either the preservation of himself or the propagation of the human species. He may be moved by the pleasure as a secondary end influencing him to do the primary act for its own proper end. In other words, the end of the agent (*finis operantis*) can be the pleasure itself, provided the main end of the act (*finis operis*) be not excluded, either explicitly or implicitly, from the intention of the agent. It would be explicitly excluded if one should act with the express intention of so doing for the pleasure alone; it would be ineffectually excluded if the act were done in a manner fit to attain its proper end, and effectually excluded, if it were not so done. The main end would be implicitly but effectually excluded if one were to do the act in a manner that is not fit to attain the end, but only effective to produce the pleasure, and that although the agent did not expressly intend such a result. The *finis operis* is not either excluded by acting with pleasure, or even for the pleasure, provided one does not act for the pleasure alone, either expressly, or by doing the act imperfectly. Temperance, therefore, so moderates those chief pleasures that the correct order in the precedence of those two ends de-

scribed above is observed, and this from a consciousness that the order established by God is just. Intemperance inverts this order, or destroys it by seeking the pleasure alone.

This observance of the order of precedence established by the natural law is not a mere academic distinction. Its subversion is sin; and the consequences of the subversion are all the moral and physical evils that follow from the vices of intemperance. Reason and unreason, observance or disregard, of the order fixed by the natural law, are the foundations of happiness and unhappiness; they are synonyms for virtue and vice ("peccatum in humanis actibus est quod est contra ordinem rationis"), the source of evil and good forever. The more rational we are, the closer we march to law, the better we are; the more irrational we are, the worse we are.

Whatever a human being is or does he must seek happiness: that is an essential quality of his being. Happiness is the satisfying of our desires; but as our desires are limitless, only infinite good can satisfy them. The sole sufficient good that states all human longing is the infinite God, and to be happy we must be united with God. Obviously the only possible method of possessing the infinite God is through mental union, by indisturbable contem-

plation of His infinite truth, goodness, being, beauty, and His other attributes. If perfect, everlasting happiness is not in that, in what can it be? Is it in human fame, honor, riches, science, art, man, woman, or child? None of these can give *lasting* happiness, and no other happiness is real happiness.

Another eternal law is this: the only means we have to attain to union with infinite good is to follow out the conditions inexorably placed by the infinite God, which is, to act in life in keeping with right reason, or, what is the same thing, to practise the virtues and avoid the opposing vices. When we have fulfilled this absolutely necessary condition we win a foretaste of happiness here, and the perfect union after we have finished our little round of earthly tasks. If we do not believe this grave truth it is solely because we have been irrationally vicious, and are blinded by unreason. If you snub Conscience a few times she will cut your acquaintance, and tell you no spiritual fact.

“When we in our viciousness grow hard—
Oh, misery on’t!—the wise gods seal our eyes;
In our own filth drop our clear judgments; make us
Adore our errors; laugh at’s, while we strut
To our confusion.”

Man’s supreme honor is the freedom from the tyranny of unreason, of passion, and in a necessary obedience to external and immov-

able order, with the belief that his basic duty is to apprehend and to conform sweetly to it. The truth of the necessary obedience to order has never in the darkest ages of the world's history fallen from the possession of great men. Gotama's teaching was founded upon "The law ruling the three worlds"; the Greek bowed to law as "The queen and mistress of mortals and immortals"; Islam acknowledged it in its cry "Allah ackbar!"; the Christian in the "Voice of God."

The things that are not for our happiness here and hereafter, which disturb the tranquillity of the contemplative soul, are "the concupiscence of the eyes, the concupiscence of the flesh, and the pride of life."¹ These destroy wisdom, which is reason acting accurately in an atmosphere of that peace the soul enjoys when its sensual appetites are suppressed. These appetites, passions, obscure the understanding and judgment, and pervert the will. "The sensual man perceiveth not the things that are of the spirit of God";² and "Blessed are the pure of heart for they shall see God."³ That peace shall be the work of justice; for justice and peace have kissed. Nor is wisdom found in the land of those that live at

¹ *First Epist. of St. John*, ii, 16.

² *I. Cor.* ii, 14.

³ *Matt.* v, 8.

ease, and happiness is the harvest of a quiet eye.

The concupiscence of the flesh, in which we are especially interested here, is checked by temperance. The athlete knows his body will not take on strength and skill unless he indulges and restrains it rationally, goes into training, practices ascesis (training); and for exactly the same reason the soul must accept ascesis, temperance. We must be laid like a brand in the fire, as Demeter set Demophoon of Eleusis, if we would gain immortal youth. The body is a good horse, noble if you will, when bitted; but when given its head it incontinently tosses you into the wayside ditch, where you may prattle of nobility till the crack of doom to little purpose.

We must seek good. Good is the sole object upon which the will operates. Truth is conformity between an object and an intellect, good is conformity between an object and a will. An object may be in conformity with man's nature, and appetible, (1) as a good useful toward the acquisition of another ulterior good (*bonum utile*); (2) as a final good, which quiets appetite, pleasurable good, (*bonum delectabile*); (3) as a final good appetible in itself apart from any notion of pleasure or utility (*bonum honestum*). This third

form of good, the *bonum honestum*, is the real moral good.

Honesty, in the original sense of the word, predicates a goodness that confers honor on the person who possesses this quality, gives him a justly laudable reputation. It is a kind of good that perfects a man. He is, in his nature, the image of God, in as much as man understands and loves, especially as he understands and loves God. The closer man lives to his rational nature the clearer the image of God in him, the greater his share in the divine goodness, the more perfect he is. To have an understanding and love of God such that the intellect and will are satisfied is to have possession of happiness. In the present life the supreme end of man's endeavor is to direct his acts through conformity with right reason, toward the acquisition, in the future life, of his final end and supreme good, which is God.

Human nature borrows by analogy its intelligible truth, necessary qualities, immutability, from the divine essence; and this divine essence, as the exemplary cause, is the final standard of right for all things, even for God Himself. The proximate standard of morality is our rational nature, the ultimate standard is the divine essence. Through our reason we judge whether a thing is good or bad; that is,

whether it perfects or injures us; and as it is good or bad, our will's tendency toward it becomes good or bad. Morality is conditioned by a deliberate and free act of the will. If the will deliberately and freely elicits an act directly, or freely and indirectly energizes, through another faculty, in an act that is rationally good, the deed is morally good; if the object is not morally good, the deed is morally evil. Acts that are in themselves indifferent, neither good nor bad, become moral as soon as they are freely willed with a rational end in view, and from that aspect no human act is specifically indifferent. A human act is a deliberate act, such as proceeds from the soul spontaneously with an appreciation of a formal end.

Human nature, though varied in the accidental qualities of individual men, is common and fixed in its essence,—“*Tutto il mondo è fatto come la nostra famiglia.*” The standard of righteousness, then, is evidently deduced from the relations of man's complete nature to other men, to inferior creatures, to himself, and to God. He is by nature social, and what is necessary to society is congruous with man's nature, good, moral: as, for example, to do justice, to abstain from injury. He is to use

inferior things for the preservation and perfection of his life, congruously and not deordinately. Order, harmony, beauty, underlie all that is good and moral. His body, with its passions, exists for his soul; it is the servant of his soul, not the master; it must therefore be subservient to the interests of the soul, it must do nothing that clouds the soul as a reasoning faculty, or subjects it to passion. The whole man ordinarily tends toward God, we naturally pray *Ut in amorem invisibilium rapiamur*; and man should avoid what prevents the knowledge and love of God, in which union with Him consists, and accept only what perfects that knowledge of God and that love. All this supposes freedom of the will. Morality, avoidance of alcoholism, or other evil, as far as its moral element is concerned, requires a will free to act. Is there such a thing as free will? If there is not there is no morality, no eternal right and wrong, no human responsibility, very little insanity, and alcoholism has no signification except as a material intoxication which causes degeneration in somatic tissues.

Volition supposes desire, which is a mental longing or want excited by the representation of some unpossessed good. We recognize a good, but we do not possess it; therefore we

have a feeling of attraction toward it as a congruous object. A physical appetite excites sensation, and is sated temporarily by exercise; but a desire may be indefinite and life-long. Some desires are altruistic and not pleasurable.

In a multiplicity of desires conflict arises. The attainment of one may interfere with the attainment of another. Objects that thus arouse desire are called the Motives of Desire, and a motive is powerful (1) in proportion to the clearness, vividness, of its presentation to the mind; (2) through its own qualities; (3) according to the character of the observer; (4) the degree of attention turned upon it; (5) as it is or is not a habit, a virtue, or a vice. When we collate several motives, and shape our decision in conformity with one or other of these, the volition is deliberate. We may will after prolonged reasoning, or by a quick judgment, by acquiescence in the easiest manner, or after a bitter struggle.

A free volition supposes a knowledge of a desirable good; (2) advertence to possible alternate courses of action; (3) an act of preference; (4) a consequent active inclination of myself to the side chosen. This is much more than a mere desire, or than instinct. The exercise of choice is an act of self-control.

Habits as connected with volition will be considered later.

Will is the soul inclining toward an object intellectually apprehended as good. Free will is the capability of determining oneself: if the requisite motives for making a volition are present, the will may or may not make that volition as it chooses. There must be at least two motives to select from to have freedom of the will. That we really can choose between two motives is self-evident, but as there are always found men ready to deny the obvious, Determinists, Fatalists, and the like, the argument to prove that the will is free must be given, at least in outline. The proof is three-fold: ethical, psychological, and metaphysical.

I. The ethical proof: from the consciousness of a moral obligation. All men, in every age of the world, know that the moral law is the foundation of a practical social life; that is, the existence of human society depends upon a rejection of evil doing and an acceptance of duty. Right conduct is not a mere academic ideal; it is a code of laws that binds us with absolute authority. However displeasing or injurious obedience may be to us, we know we must abstain from violence, perjury, and like evil; we are to pay our debts; fulfill our duties. We also know that we do not always bow to these

laws; that at times we act contrary to them. If the law obliges me, I must be able to choose obedience; it would be absurd to oblige one that lacks the power of fulfilling the obligation. This is not begging the question. As a matter of fact we know we can refuse to commit, say, perjury, or we can consent to do so. That is freedom of will. A good that is merely an ideal excites admiration, not love; gives æsthetic pleasure, and is not a source of action; is an object of the intellect, not of the will at all.

The feeling of remorse and repentance for an evil deed proves that I recognize the power I had to avoid that evil deed; the notion also of merit for a good deed supposes that I had power to do or not do the righteous action. Retribution for a misdeed, responsibility, whole complex notion of justice, all rest on the foundation that I am free to do or not to do the acts that bring out these qualities of retribution, responsibility, or justice. That again is free will.

Responsibility supposes (1) a just authority in the law; (2) a consciousness of the right or wrong in the action; (3) capability in the agent of doing or not doing the action. If one or more of these conditions is absent there is no responsibility in the agent. That the object attracts or repels my will does not constitute

responsibility. The conditions must exist, the act must be mine, within my power to do or to reject; otherwise I am not responsible, not answerable for it. Ignorance, passion, and similar forces, when they are beyond my control, remove or lessen responsibility as they prevent or diminish freedom. The first natural, instinctive excuse of the child is "I did not mean it; I could not help it"; and all mankind admit this excuse as valid. Responsibility is not a result of knowledge alone, but of knowledge, freedom of action, and proper authority in the law in question.

A person's character is not the basis of responsibility; it may be an element of responsibility; but in itself it stands outside responsibility. Character is the effect of all the internal and external forces that have been at work upon a man from the moment his soul entered upon existence—heredity, health and disease, race, nationality, climate, mental and physical education, environment, religion, caste, strength or weakness in the faculties of soul and body, and a hundred other factors, are blended in the formation of a man's character, which is "the momentum of his past," but his will stands above all this, and his responsibility.

II. The psychological argument is drawn

from the consciousness we have that after a consideration of motives to accept or reject the real or apparent good presented to us, we may do one or the other. In any deliberation upon motives we know that we consciously guide the course of our thoughts; we give prominence to one and suppress another; we often take an obscure or unpleasant motive, and by purposely setting it in the light make it prevail upon us as the final motive force; we know that we exercise preferential attention. Moreover, we know that we ourselves are the sole agents causing this special mental activity. All this is the very definition of free will. As James said¹ "The whole drama of the voluntary life hinges on the amount of attention, slightly more or slightly less, which rival motor ideas may receive."

Attention is an energy of thought directed by the will toward an existing experience; an application of thought to an object. It may be voluntary when we deliberately turn the light of the intellect upon a special object; or involuntary when the object obtrudes itself. Sometimes a continuation of involuntary attention becomes a pathologic "fixed idea," a psychosis.

Attention (1) intensifies the mental opera-

¹ *Principles of Psychology*, vol. i, p. 453.

tion upon which it is centered, whether that operation is a sensation, thought, or emotion. (2) It gives distinctness to the object toward which it is directed; it clarifies the relation between things considered. This intensity, and the classification of relations, give knowledge, are a source of invention and discovery. (3) It impresses an object upon the memory.

III. The metaphysical argument is drawn from the nature and operation of the will. The will is a rational appetite. The intellect can conceive unlimited and unalloyed good, but in our present state, this concept is not perfect. If it were, if we clearly understood illimitable good, or God Himself, there would be no free will, because we should necessarily tend toward that good so known. Since, then, this good is imperfectly known, other good, inferior, or not genuine, can attract the will, and the will can choose one or other object placed before it, as in fact it does. Finite good is defective, infinite good is not understood; hence the opportunity for motives that induce a free choice.

Right and wrong, then, moral good and evil, exist, and the same human being can do right or wrong as he wishes; he can deny himself a gratification, or accept it; if the gratification is evil he is obliged to forego it by law, but the

will is free. "Our bodies are our gardens; to the which our wills are gardeners; so that, if we will plant nettles, or sow lettuce, set hyssop, and weed-up thyme; supply it with one gender of herbs, or distract it with many; either to have it sterile with idleness, or manured with industry, why the power and corrigible authority of this lies in our wills."

As was said, the rejection of a present good for the sake of a greater but more distant good is a basis of righteousness. If an intemperate person indulges his sensuality now and thereby forfeits future health, honor, happiness, and similar great benefits, he is vicious; if his present self-indulgence causes injury to others his viciousness is made worse. The intemperate man may do injury to himself alone, or to himself and those connected with him; and this is true of almost any form of moral evil. The existence of society depends in great part upon the curbing of self-indulgence, and all societies punish the transgressions of this fundamental law.

What do we mean by strength of will? It is willing effectively. Such willing may be done with effort graded between extreme violence and perfect ease; it may be constant or interrupted; bungling or skillful; crude or subtle; harsh, cruel, arrogant, or gentle, charitable,

modest; it may attain its end by means neither excessive nor insufficient; it may be tinged with a somatic, physical quality, or be altogether spiritual; it can have moral good or evil as an incentive; it may be venturesome, aggressive, emigrant, or content with the letter of the law, domestic.

Strength of will, like all strength, is a means for attaining ends, not an end in itself. One of the great evils in life is the mistaking means for ends. The glutton mistakes for an end in itself pleasure in food and drink, which is a mere mean to an end, the preservation of the individual; the unchaste makes an end of a mean toward that end, which is the conservation of mankind; the defective artist sets up technical skill as the end, whereas it is only a mean toward that end, which is the reproduction of beauty; the ordinary merchant centers his mind on money, or similar wealth, which are means toward that end, the preservation of life in tranquil liberty and righteousness; the vain preacher stops at oratory, which is a mean toward that end, the glory of God; the pagan scholar worships the tool knowledge for itself, or if he applies knowledge the application is to other means, not to the end and purpose of our creation. A worship of even truth itself can be idolatry: the man that works

ten years on the beading in the tubercle bacillus, and says he finds it connected with the truth of whole world, might just as wisely tell us after ten years' study that the moon is really not made of green cheese—interesting, but what's the use? The concupiscence of the eyes, the concupiscence of the flesh, and the pride of life, all the vices and crimes of humanity, are a deordination which turns means into ends.

Strength of will, then, since it is a mean, is foolish if it is not effective; a paradoxical strong but ineffective will is a poet that can not write poetry, a braggart useful only to make conversation, a poor pathetic Lear who

“Will do such things,—
What they are, yet I know not; but they shall be
The terrors of the earth”;

And the end is a crown of straw.

Strength of will as a moral force may be confused with one of its ends, as the practice of justice, fortitude or temperance—prudence implies strength of intellect, not of will. Strength of will, however, is not exercised, strictly speaking, in the practice of a vice like intemperance. There the passions dominate a weak will and constrain it to yield; there may be violence in the very yielding; but that is

lunacy of will. Strength when moral is ordinary.

There is then, such a thing as morality, right and wrong, and this is an important fact as regards drunkenness and sobriety; (2) man can observe the moral law since he has free will; (3) it is difficult at the outset to follow the law, but there are helps, which tend to make obedience a comparatively easy habit, and these helps are called virtues; (4) one of the cardinal or fundamental virtues is Temperance, and sobriety is the species of temperance we are considering here.

CHAPTER VII

THE ETHICS OF DRUNKENNESS

Before explaining the nature of the virtues that cure drunkenness, the ethics of drunkenness should be made clear. As a physical condition drunkenness is identical with narcosis or general anæsthesia. It is an inhibition of reason, or consciousness, through the deoxidation of neurons and a consequent loss of their conductivity, from the action of large doses of alcohol, ether, chloroform, nitrous oxide, opium, or other narcotics. These agents shut off oxygen from the somatic cells, as do suffocation, fatigue, extreme heat or cold, possibly by paralyzing the oxygen-carriers or through direct contact of the alcohol, as the blood of a drunken man may hold as high as 2.26 per cent. of alcohol. A result of the exclusion of oxygen is an inhibition of function, of conductivity, in the nerve-cells. These cells can not carry any external impression through the brain to the mind, nor back from the mind, through the brain, to the external world; hence the patient is unconscious.

Graham showed¹ that chloroform deoxidizes somatic cells. Verworn also has proved² this fact. As far back as 1873 Jolyet and Blanche proved that nitrous oxide³ produces narcosis by deoxidation of the body-cells, and many other observers have since corroborated this proof.⁴

Although we have no complete notion of the nature of pain, we know that physical pain is a disagreeable state following severe stimulation of the skin, muscles, or the nerves themselves, and that the sensation is carried by the nervous system to the brain, and thus on to the mind. The action of the various anaesthetics in excluding a sensation of pain is, again, a result of deoxidation, which inhibits the conductivity of the neurons.

This inhibition of neuronic conductivity has two effects: (a) the exclusion of sensation generally; and (b) the privation of consciousness. Both these effects proceed *æque immediate* from the use of the alcohol, or of the anaesthetic, more properly so called. The exclusion of sensation is not an effect of the unconsciousness, nor is the unconsciousness an effect of the exclusion of sensation, but both are dis-

¹ *Journal of Experimental Medicine*, xv:307, 1912.

² *Bulletin of the Johns Hopkins Hospital*, xxiii:97, 1912.

³ *Archives de physiologie normale et pathologique*, July, 1873.

⁴ Vid. Wood's *Therapeutics*, Eleventh Edition, p. 87, Philadelphia, 1900.

tinct effects of the inhibition of neuronic conductivity by the drug used.

This is a very important fact as regards the moral licitness of general anæsthesia for surgical purposes under proper conditions. When general anaesthesia is induced by the surgeon the action of the anaesthetic drug, which annuls the conductivity of the nerves, has a double effect: one effect, which is good, is to avert pain and shock, and make the surgical operation possible; the other, which is evil, is a suppression of consciousness by violence, contrary to the method of nature. The cause here is an indifferent act morally.

When an indifferent or good causal act has two immediate effects, one good and the other evil, i. e., when both these effects proceed *directly* from the cause, and the good effect is not a consequence of the bad effect, then the act may licitly be done with the intention of getting the good effect, notwithstanding the fact that the evil effect will also follow. Four conditions, however, must be fulfilled to make the act licit:

1. The end, intention, aim, of the operator must be good, "honest"; that is, it must be directed toward obtaining the good effect. If he even only complacently regards the evil effect, in that much is the act evil and illicit.

2. The causal act must be good or indifferent morally. If it is bad in itself it vitiates all consequences.

3. The good and evil effects must proceed immediately from the causal act. If the good effect follows meditately through the evil one we should be doing evil, making a good end justify bad means.

4. There must be sufficiently grave reason for doing the act. Natural equity obliges us to avoid doing any evil whatever when we are able to avert such evil, but it would be intolerable if we were prevented from doing every action that has any evil connected with it.

In surgical anaesthesia the good effect, which is to avert pain and shock, is directly intended; the evil effect, which is the inhibition of consciousness, is only permitted reluctantly. Then (1) the end is good; (2) the causal act (giving the anaesthetic drug) is indifferent; (3) the good and evil effects follow immediately from the cause; (4) there is a sufficiently grave reason for seeking the good effect. Therefore all the conditions requisite to make general anaesthesia morally licit are preserved.

All moral theologians permit the use of general anaesthesia for surgical operations, and they insist that every precaution must be taken to guard the life and health of the patient dur-

ing the anaesthesia. In the use of nitrous oxide there is ordinarily no risk of life; ether, if the kidneys are sound, is not dangerous in the hands of a skillful anaesthetist; there is always some danger in the use of chloroform. Medically and morally it is culpable for an unskilled person to attempt to give ether, chloroform, or even nitrous oxide; and a physician without considerable experience in giving anaesthetics under a supervision of a competent man is an unskilled person. Even if the anaesthetist is skilled, he must also know all that is discoverable concerning the condition of the patient's heart, kidneys, and general state before the anaesthesia is begun. Ether may kill a person that has nephritis, chloroform will stop a weak heart, and so on.

As to the morality of drunkenness from alcoholic liquors the common doctrine of moralists is that complete drunkenness is a mortal sin. Saint Thomas in his earlier writings¹ taught that drunkenness is in its nature a venial sin, and becomes mortal only *per accidens*; he later changed this opinion² to that now held by moralists.

Saint Alphonsus Liguori says,³ "The malice

¹ *De Malo*, q. 2, a. 8, ad 3; q. 7, a. 4, ad 1; and *In Epis. ad Gal.*, v.

² *Lect. III on Chap. XIII Rom.; Summa Theol.*, 1, 2., q. 88, a. 5, ad 1; 2. 2., q. 150, a. 2.

³ *Mor. Theol.* lib. 2, n. 75 *et seq.* Mechlin edition, 1852.

of complete drunkenness lies in this that a person, without sufficient reason, solely for pleasure, or gluttony, consciously and willingly deprives himself of the use of reason; not simply, as happens in sleep, the natural manner established by the Creator to preserve strength and the image of God in us, but violently, in an unnatural manner, by clouding reason, debasing the image of God in us, and that to an equality with the mindless brute. Drunkenness, moreover, deprives one of the power of using reason should any sudden necessity for such use arise." This, he adds, is the common doctrine of moralists.

All agree that the malice of drunkenness, as distinguished from mere chronic alcoholism, is chiefly in this that a person willingly and consciously deprives himself of the use of reason. Hence, the sin is not technically mortal, especially in the teaching of Saint Alphonsus, if enough consciousness is left to differentiate between good and evil, although there may be some mental confusion: just where to draw the line between venial and mortal sin in a particular case may be difficult at times. Many theologians hold that drunkenness is not a mortal sin if it deprives one of reason for only a short space of time; and these writers say that an hour is a long space of time in this connection.

Saint Thomas tells us¹ the malice of complete drunkenness consists in this that "A man willingly and consciously deprives himself of the use of reason, the means by which he performs virtuous acts and avoids sin; and thus he sins mortally by exposing himself to the danger of sin."² This last phrase refers to an accidental additional evil in the act of drunkenness.

There has been much dispute among moralists as to whether it is a mortal sin to become drunk by using a large quantity of alcoholic liquor prescribed by a physician to cure disease: this case has been discussed from the time of Saint Thomas³ down to our day; but the suppositum here is to be denied. There is positively no ill to which a human being is liable that can be cured or bettered by large doses of alcoholic liquor, whether prescribed by a physician or not. This dispute from our present medical practice is now wholly obsolete.

Génicot said,⁴ "It seems licit to induce drunkenness for the cure of disease, if such an effect is possible; e. g., to cure typhoid, or to check the effect of snake-venom (*Sabetti*, n. 449). It

¹ 2. 2., q. 150, a. 2., corp. art.

² "Ebrietas est peccatum mortale quia secundum hoc homo volens et sciens privat se usu rationis, quo secundum virtutem operatur et peccata declinat; et sic peccat mortaliter, periculo peccandi se committens."

³ 2. 2., q. 150, a. 2., ad 3.

⁴ *Theol. Mor. Instit.*, vol. i., p. 162, Louvain, 1902.

is lawful also to dull consciousness through drunkenness for the purpose of relieving great pain: there seems to be no moral difference between such a method and others that are used—chloroform, for instance."

In the treatment of typhoid fever and pneumonia many physicians still use alcohol in certain conditions, but never to the point of inebriation: indeed, the sign to lower the quantity, or to discontinue its use, is the mere smell of alcohol on the patient's breath. As early as 1829 Dr. Cheyne of Dublin, a leading authority on fevers in his time, opposed, in *A Letter on the Effects of Wine and Spirits*, the use of alcohol in the treatment of fevers; and he cited the good effects he had obtained at Baltimore in Cork by not using alcohol as had been customary.

In the United States when a person has been struck by a poisonous snake a popular theriaca is a large dose of whiskey, a pint or more. This is a very dangerous, and altogether useless method of treatment. It adds alcoholic poisoning to the snake poisoning, and lessens the patient's chances for recovery: if he recovers health he does so in spite of the venom and the alcohol, not because of the alcohol.

The Cobra of India is a Colubrine serpent: the *colubridæ* comprise 90 per cent. of all

snakes. The rattlesnake is viperine; it belongs to the family *Crotalidæ*, or pit vipers: so called from a fossa in the maxillary bone between the eye and the nostril. There are two subfamilies, the *Lachesinæ*, which have no caudal rattle, and the *Crotalinæ*, which have the rattle. Two poisonous North American serpents, the Water Moccasin and the Copperhead, belong to the *Lachesinæ*. The Moccasin is a water snake; its tail ends in a horny spike; the open mouth is white—hence the name, Cotton-mouth. The Copperhead is sometimes called the Upland Moccasin; its triangular head is of a bronze-red color (hence the name); it is also a cottonmouth like the moccasin. Both these serpents are venomous, but not so deadly as the larger rattlesnakes.

There are 16 species of rattlesnakes in North America, and of these the common or banded rattlesnake (*Crotalus Horridus*) of the eastern United States, and the diamond or water rattlesnake (*Crotalus Admanteus*) are the most important. The *Crotalus Horridus* is not aggressive, but it has frequently caused death. One gramme of its venom (about 15 grains) will kill 600 kilogrammes of rabbits. The *Crotalus Admanteus* may reach a length of more than eight feet and a girth of 15 inches. This is a very dangerous serpent, and it is

somewhat aggressive. In 1908, one of these snakes, in the Zoölogical Park in Washington City, struck a man on the middle finger; and although the man's life was saved by a prompt use of Calmette's serum, he lost the finger, he had to spend 33 days in a hospital in great suffering, and he became dangerously anaemic.

Whatever is done in snake poisoning should be done promptly. The wound is to be ligated off, and a 2 per cent. solution of hypochlorite of lime is used to chemically neutralize the venom. When Calmette's serum can be obtained (it may be bought in New York and Chicago) it should be used: 10 c.c. of the liquid or 1 c.c. of the dried preparation is dissolved in 10 c.c. of sterile water, and injected hypodermically. When the serum can not be obtained, as is the usual occurrence, heroic doses of strychnia are used—1-12 to 1-6 of a grain every half-hour hypodermically.¹ There is little or no indication for alcohol. The venom of the *viperidæ* coagulates the blood, and alcohol can not prevent this action. The poison depresses the heart, but we have much better stimulants than alcohol to meet this symptom. Later the respiration is inhibited.

The evil a person does whilst drunk is mor-

¹ *Australasian Medical Gazette*, viii:41.

ally imputable to him provided he foresees, even probably, that he will commit it. Criminal actions are especially chargeable against the drunkard, as murder, assault, damage to property, unchastity, scandal, neglect of family, and the like. Evil speech in the form of contempt may not be grave sin, as no one seriously heeds a drunken man; but blasphemy and obscene speech are attributable to him, as they are intrinsically evil. These deeds and words are not voluntary in act, but they are in cause.¹

The physical and moral evil done a child which is conceived in drunkenness, or is the offspring of a chronic alcoholic, is imputable to the drunkard in greater or less degree according to the drunkard's knowledge.

As was shown above, 50 grammes of alcohol taken at a daily sitting (a pint of claret, a half-tumblerful of whiskey) brings on all the somatic injuries of chronic alcoholism, although the drinker may not become drunk in the meaning of the term as used by moral theologians. The bodily diseases, the loss of working power, the injury done society and offspring, can all become mortal sins in themselves apart from any notion of technical inebriation. Sometimes, even a pint of American beer taken daily

¹ Cf. St. Thomas, 2.2., q. 150, a. 4.

at a meal for 12 days will so congest the kidneys of a middle-aged man, who has been proved to be healthy by frequent previous examinations, that casts will appear in his urine where none before existed. In such a case a pint of beer daily is a dangerous excess, and where a family is dependent on the man the excess is a grave sin: just what degree would constitute a mortal sin in this case would have to be judged specially. To take a drug in a quantity sufficient to cause chronic inflammation of the liver or kidneys, degeneration of the nerves, and the like, can evidently become mortal sin, apart from any notion of drunkenness as a deprivation of consciousness, provided the person knows that he is bringing on these bodily diseases.¹

Chronic alcoholism, as far as the body is concerned, is evidently a disease, as tuberculosis or nephritis are diseases; but it is a self-inflicted disease, as the cutting off of a finger to escape military service is a self-inflicted disease, or mutilation. As the acquisition of the disease of chronic alcoholism is the result of a series of immoral acts, the fact that it is a grave physical disease adds to the moral turpitude.

¹ "Mortalia recipiunt speciem non ab his quae per accidens eveniunt praeter intentionem, sed ab eo quod est per se intentum." Saint Thomas, 2. 2., q. 150, a. 2., Cf. ibid. a. 4, corp. art.

Like syphilis acquired in a brothel, it is not only a disease, it is also a vice and a crime. The chronic alcoholic and the syphilitic may repent their original immoral acts, but they seldom advert to the fact that the bodily degeneration in itself is also a deordination which demands moral satisfaction. The alcoholic cirrhosis, nephritis, neuroses, mental hebetude, the swarming heredity of physical evils handed down to children and children's children, and so on, are each a separate vice or crime. Hence Aristotle said¹ "The drunkard deserves double punishment"; and Sir Edward Coke:² "As for a drunkard, who is a *voluntarius dæmon*, he hath no privilege thereby; but what hurt or ill soever he doth, his drunkenness doth aggravate it."

When one commits an immoral act he falls into the sins that naturally follow from this act, in as much as the immoral act embraces the proximate chances of committing these sins. Whoever, then, culpably grows drunk takes upon himself beside the substantial malice of drunkenness, its accidental and derivative malice, by exposing himself to the danger of committing these resulting immoral acts, or of omitting the good he should normally do.

If a person is not fully drunk, if reason

¹ *Ethics*, lib. 2., c. 5.

² *On Littleton*, 247, a.

enough remains to differentiate between good and evil, those sins that are secondary effects of the drunkenness (that are other than the actual loss of reason) as lewdness, and the like, are directly imputable; they take on a primary, substantial malice of their own. As to sins that are done in full drunkenness, they might be excused where there is ignorance of the likelihood of their occurrence, as ignorance is a cause of involuntariness. These secondary or consequential sinful acts may, however, be voluntary through another precedent voluntary act, the drunkenness itself. If, then, a man becomes drunk through no fault of his own, say, by not knowing that a given drink is intoxicant, and while drunk he commits homicide, or any other crime, he is not guilty morally of this incidental act. If, however, the drunkenness is voluntary the incidental, consequent acts are imputable to him as guilt; since whoever is guilty of an evil cause is guilty of its evil effects; but whatever diminishes the voluntariness of these secondary acts lessens their guilt.

The man who is about to become drunk may foresee, from experience or otherwise, certain sins as surely or likely to follow—quarrels, damage to property, contumely, unchastity, scandal, injury to health, hardship, pain, and shame to his family and friends, blasphemy,

scurrility, and the other evil acts any drunkard is liable to do or cause. These sins are all imputable to him, if he commits them, in their proper primary malice, as mortal sins when they would be mortal sins in another man, because he has deliberately placed the cause for them.

The drunkard is accountable not only for what he does, but for obligations he omits to fulfill. Saint Austin said,¹ "As our bodies are earthly, and as overmuch and ceaseless rain and hail do flood the fields, and turn them to mire, so that no husbandry in aught availeth: thus our flesh when drunken with too frequent cups, neither taketh on ghostly tilth, nor sheweth harvest of the soul's needful fruits." It is difficult to be at the same time a tapster's rag to sop up overabounding wine, and a Son of God.

¹ Sermon 231, *De Tempore*.

CHAPTER VIII

THE PASSIONS AND THE NATURAL CONTROL OF THEM

With the drunkard, if he resist his lower tendencies at all, the conflict is between the reason and the appetites. The terms appetite, emotion, feeling, and passion are commonly made synonymous. The emotions are modes, aspects, or qualities of cognitive and appetitive energy, positive or negative phases of intellectual and volitional action. They are either complex forms of mental excitement which is not rational, or they are pleasurable or painful aspects of mental energy. Feeling is sometimes a synonym for emotion, but it may also denote instinct, or cognition with certainty without consciousness of a reason for this knowledge.

Passion is, strictly, an emotional state wherein the excitement is intense, or where there is a strong permanent tendency toward some particular emotion. Emotion is commonly blunted by repeated use, passion is made keener. As Kant said, emotion is like a flood

from a broken dam, passion is a stream that erodes an ever deepening channel. Feeling begins as emotion, and if stimulated it ends as passion.

The emotions or passions always have a sensible element even when the idea that awakens them is spiritual. There are four parts in every emotion or passion: (1) the affection or motive principle, which is love of one kind or another; (2) the notion of an object that can gratify or disappoint that affection; (3) the conscious feeling, the felt movement or tendency of the soul—hence the term *emotion*, moving out; (4) the organic affection that shows itself in the body by the quickened respiration, the moving lip, the heart-beat, and so on.

There are eleven chief emotions or passions, and all others arise from these, either by composition or a change in the object. These are Love, a tendency toward real or apparent good (it may be sensuous or intellectual); Hate, an aversion to real or apparent evil; Desire, a tendency toward possible or eligible good; Fear, a recoil from avoidable evil (terror is excessive fear); Hope, an inclination toward a difficult but probable good; Despair, a hatred of unavoidable evil; Delight, a fruition of present good; Grief, a suffering from present evil; Anger, a perturbation of the soul that arises

to avenge honor, or to overcome hindrance; Boldness, an elevation of the mind eager to surmount obstacles; and Anxiety, a depression of the mind apprehending danger.

Those passions and emotions that seek good or avoid evil are called the concupiscent passions or emotions; those that regard good as hard to gain or evil as hard to shun are called the irascible emotions or passions. All have to do with good or the privation of good, and are ruled by the virtues of the will. The moral virtues, which are habits that make the will well disposed and the deed perfect, incline the emotions and passions to act in harmony with reason. The four cardinal virtues, or hinges on which the other swing, are Prudence, which selects means for the end; it directs the intellect; Justice, which gives every one his own, and directs the will; Temperance, which governs the concupiscent passions or emotions, as love, hate, desire, delight; and Fortitude, which controls the irascible passions or emotions (as anger, hope, despair, fear, grief, boldness, and anxiety). The concupiscent passions, if unchecked, urge us to act contrary to reason; the irascible passions make us hold back from what reason urges us to do: temperance, which moderates the concupiscent passions, restrains; fortitude, which controls

the irascible passions, urges us onward. The irascible passions grow out of the concupiscent.

The will is an intrinsic principle; a passion is a principle extrinsic to the will. The passions are good or morally indifferent, but when they influence the will they are a source of moral good or evil. They can have so strong an influence that in certain conditions they completely overpower the will: great fear, for example. As Bacon said, "Revenge triumphs over death, love subjects it, honor aspireth to it, grieve fleeth, feare preoccupieth it." According to Saint Thomas¹ anger more than any other passion overturns reason. One of the chief means to hold the passions in check is the virtues.

Experience shows that acts of the will and intellect when performed do not utterly cease so that nothing remains of them. A kind of residue is left, which is piled up by repeated acts in strata, as it were, and this accretion makes a foundation for the stability of the will to rest upon. The will by resisting evil again and again, and seeking good, gradually acquires habitual dispositions, which are called virtues. On the other hand, if no effort is made to avoid evil, gradually habitual disposi-

¹ 1. 2., q. 48, a. 3.

tions are formed, which are vices; habits fitted for evil.

The virtues and vices are habits. A habit (*habitus, habere*) is a quality that determines a subject to have itself well or ill disposed according to its nature; it is a stable quality, a motive principle, added to a faculty, which disposes this faculty toward a *particular* course of action; it is commonly an acquired aptitude for some special kind of work. A habit is a kind of quality by which anything *has* itself in relation to something else as regards motion in difficulty. It is something more than a disposition; more firmly fixed, at least in its cause, as a quality rather than as a disposition. Sickness and health are dispositions, not habits. Some dispositions grow into habits. As regards action a habit is the *actus primus*, and the act is the *actus secundus*.¹

An organism grows to the mode in which it is exercised; and what was conscious, voluntary effort may become even reflex, automatic, through the repetition that forms a habit. Voluntary actions that were learned with much effort, through frequent repetition may become so easy that they are done unconsciously—for example the complicated movements of the fin-

¹ Cf. Saint Thomas, I. 2., q. 51, a. 3.

gers in playing a musical instrument. This happens also in the moral order.

Habits are acquired and kept in existence by repeated acts, and the rapidity and ease of acquiring a given habit differ in individuals. Congenitally some men are so disposed that they take on certain habits quickly. We find somatic tendencies, stable and unstable nervous diatheses, peculiar conditions of the auditory tract, congenitally strong memory or vivid imagination, and so on, which make special good and evil habits easy and rapid of acquisition.

Habits are of the intellect and will; are of the faculties of the soul; although supernatural habits, like grace, may be of its substance. Material faculties are determined to one method of action, and properly speaking, have no habits; but the intellect and will are not so limited, and a habit becomes a beaten pathway for the movement of these spiritual energies in fixed directions. The will is moved by the intellect, the inferior appetites by the will; habits of the will are formed by the repeated inclination given to the will by the intellect. These habits are especially intensified by repetition of the acts proper to them, if the acts are proportionate in degree to the habit already present. Volitional habits are diminished or destroyed

by the repetition of acts contrary to those proper to the habits, or contrary to the cause of these acts, or by the mere cessation of these acts.

The soul considered as the active principle, the agent, has no natural habits; but the soul as moved by something else receives a quality from the mover which results in a habit. A habit supposes a passive faculty, and this faculty is so moved by an active principle that the motive tendency becomes a quality of this passive faculty. The active principle is reason, and it gradually determines a passive faculty (which tends toward *various* objects) to move in *one* groove, toward one kind of act, and this specialized motion constitutes a habit.

Speaking in intellectual habits Saint Thomas says,¹ "When man stops the habitual use of the intellect, the imagination raises extraneous images, which are even contrary to intellectual energy; and these fancies, unless they are cut off or suppressed by frequent exercise of the intellectual habits, render one less fit for correct judgment, and sometimes altogether dispose us to bad judgment." This is the reason the novel-reader, those given to sensual pleasures, dreamers, find it difficult or impossible to concentrate the mind on intellectual

¹ L. 2., q. 73, a. 2.

work. They lose the habit of spiritual attention, reasoning, patient study, or never form these habits: they dissipate, that is, scatter; they do not concentrate.

When a habit is such that it perfects the rational faculties of man, and inclines him toward what is the good of those faculties in their operations, such a habit is called a virtue. A virtue is a habit determining a rational faculty to good; it is a disposition of a perfected faculty toward what is the best act the faculty can perform. A habit that determines a faculty to evil is a vice.

The will is more properly the subject of virtue, because virtue strictly speaking always goes over into action, which is of the will. A man is virtuous not because he can act well, but in as much as he actually and constantly acts well. There are, however, habits of the intellect that are called intellectual virtues, especially when they help the will in its own more real virtues. The speculative intellectual virtues are Wisdom, Knowledge, and Understanding; the practical intellectual virtues are Art and Prudence. Wisdom is reason acting accurately in that atmosphere of peace the soul enjoys when its sensual appetites are controlled: the passions uncontrolled trouble

peace, obscure the understanding and judgment, and pervert the will. "The work of justice shall be peace, and the service of justice, quietness, and security forever. And my people shall sit in the beauty of peace, and in the tabernacles of confidence, and in wealthy rest."¹ Virtue is not knowledge alone, although knowledge, or its absence, affects the virtues; nor is vice ignorance, except in part. One of the uses of virtue is an impetus of the will to slide us safely over a spot made boggy by ignorance; or it is like a fire-drill in a school which leads confused children through smoke to safety.

The cardinal or fundamental virtues are prudence, justice, temperance, and fortitude. In dealing with the good that benefits our nature it is necessary (1) that reason rightly considers this good and offers it to the will as a standard of action—that is prudence, a habit of virtue of the intellect; (2) the will follows out in its own actions the order proposed (a) as regards relations to other men (justice); (b) as regards the control of passions that urge us toward a false good contrary to reason (temperance); (c) as regards the strengthening of the will in any difficult endeavor to attain be-

¹ Isaiah, xxxii, 17, 18.

fitting good (fortitude). Discretion, righteousness, moderation, and firmness, are other names for these four fundamental virtues.

The acquired moral virtues, when perfect, are necessarily all connected; so much so that one can not exist without the others; that is, when there is question of a virtue, not of a single act of a virtue: as Cicero said “*Si unam virtutem confessus es te non habere, nullam necesse est te habiturum.*”¹ The natural virtues all rest on prudence, because the virtues constantly choose and follow rational good, and such a choice of direction is the essence of prudence. Prudence, however, can not be exercised unless temperance prevents clouding of the intellect by the concupiscent passions, and fortitude lends courage to judge calmly and clearly in adverse conditions, and justice decides without prejudice or selfishness. It is the office of any moral virtue, since it is an elective habit, to make a right choice; but to make such a choice it is not enough that there should be a mere tendency toward a fitting end, which is the whole effect of a given virtue. There is need also that we select the best means toward that end; and that selection is the work of prudence, which is conciliatory, judicial, and perceptive of means to an end. Prudence itself, as

¹ *De Tuscul. Quaest.* lib. ii.

has been said, must have the ground leveled for its activity by the other cardinal virtues.¹

This matter of the indissoluble connection between the virtues is very important in the moral treatment of drunkenness, as will be shown hereafter. A drunkard will never be cured fully by directing his efforts solely to sobriety as opposed to inebriety: he must build up the whole wall, put in all the protective virtues, or intemperance will break through somewhere. Drunkenness is not inebriety alone: it is foolishness or imprudence; it implies more or less all phases of intemperance; and it shows a general lack of fortitude and justice.

The vices are not so intimately connected as the virtues, because their objects are dissociated. Avarice may neutralize luxury, but breed timidity, uncharity, and injustice. A vice is an habitual disposition contrary to what befits man's rational nature. Vices, like virtues, are intellectual and moral, and the four cardinal vices are imprudence, injustice, intemperance, and cowardice. "Æquitas, temperantia, fortitudo certant cum iniuitate, luxuria, ignavia." There are four "wounds of nature" consequent to sin which are opposed to the four cardinal virtues: Ignorance in the intellect is opposed to prudence; Malice in the will, op-

¹ Cf. St. Thomas I. 2., q. 75, a. 1; Aristotle, *Ethics*, lib. vi. last chapter; St. Austin, *De Trinitate*, lib. vi., c. 4.

posed to justice; Weakness in the irascible appetites, opposed to fortitude; and Concupiscence, opposed to temperance, in the concupiscent passions.

There are more vices than virtues, and the seven fundamental vices are pride, covetousness, lust, anger, gluttony, envy, and sloth. Pride is an inordinate desire or conceit of one's own superiority; it is unreasonable self-esteem. It is the chief vice in *intention*, as it underlies the others, and turns everything to selfish advantage. Covetousness is the chief vice in *execution*, because riches give means to fulfill all inordinate appetites. Pride is an especially grave vice because it is of the intellect, and thus a deordination of the noblest part of man. It is also opposed to Faith, without which all religion is a mere hypocritical convention.

Humility is the virtue opposed to pride, and it is the most important natural virtue man is capable of after justice: the theological virtues, faith, hope, and charity, transcend humility, but they are infused by God Who is their object. Magnanimity strengthens a vacillating will, humility checks excess in aspiration and ambition: it supposes a rational, true estimate of one's real worth. It is a very honest virtue; it tells the truth with sensitive precision. It is

not base, cringing, abject, but loyal in subordination to God. If a person has a keen intellect, a powerful imagination, a beautiful body, these are gifts of God; the worth and the glory from them justly and honestly should redound to their Creator, not to their vicarious possessor. We deserve merit for the correct use of these gifts, but very little glory for happening to be the object in which they are placed by their maker. On the other hand, anything in us that is really evil is our own, because we are the doers of the evil in us, God is not; we are accountable for this evil, God is not. Humility consists essentially in recognizing and acknowledging practically the fact that whatever is good in us is God's, whatever is evil in us is our own; all glory, then, is to God, all blame to ourselves. If a man struts because there happens to be a powerful poetic imagination in his skull, he is making a pathetic spectacle of himself in borrowed plumes. He is like a barber in armor at a masked ball pretending to be *Cœur de Lion*.

If a humble man has great gifts he sees these as belonging to God, and he uses them conscientiously and nobly, without pride, insolence, or selfishness. If the humble man lacks great gifts, he is content. Every human being, however, has great gifts in the adoption of a son of

God, and every man is capable of miraculous achievements through this adoption, if he but will to strive. The weak man, he that has permitted himself, through neglect of his heritage, to grow weak, by humility recognizes that of himself he can do nothing of worth, but in God he can do all things, and so rise to power. Humility for him becomes a part of hope, trust, courage, and victory. The drunkard, whom we have always in mind here, must begin with humility to build up the new life. He of all men should be humble enough God knows, but he is not. Often he is stubborn, self-opinionated; but in any case he lacks the essential half of humility which recognizes the presence of God within us. Even when he mistrusts himself after bitter experience, he still is inclined to lean on himself and not on God; he would rather swim on a small plank when he might just as well ride in an ocean steamer. Humility is common sense. Humility is allied to temperance. The species of temperance are abstinence, sobriety, and chastity, and the allied virtues, the *partes potentiales*, of temperance are continence, meekness, clemency, and modesty: humility is a species of modesty.

Humility makes us look at ourselves as if from the outside; there is a curious cousinship between it and humor. Humor is a display,

not necessarily a sudden revelation as in wit, of incongruity between compared objects, such as an affectation and the truth, a person's conceit and his actual condition, and the like; and this lack of order is sufficient to cause an emotional shock provocative of kindly laughter. When a perception of incongruity excites mirth that is contemptuous, exultant, victorious, or revengeful, the emotion may be satire, cruelty, revenge, but it is not humor. Humor is always virtuous, satire is commonly vicious, unless its intention be purified. Contempt, cynicism, satire, irony, perceive incongruity that may start laughter, but they see only the defect, and miss the underlying good; they are or may be vices of the observant mind. Humor is aware of the incongruity, the defect, but it also uncovers the underlying good. This is exactly what humility does. Contempt, satire, and the like, curve the lip downward and say bitterly, "You fool!" Humor and humility curve the lip upward and say kindly, "You dear brother fool, be wise!"

Humor and humility are so honest and just they laugh at themselves as readily as at the brethren. The laughter of humor and humility is not reflex, unpremeditated; it is a consequence of an incongruity uncovered so far that it is qualified by charity and justice: both see

with extreme mental vividness. Humor and humility are very practical; they are opposed to sentimentality and sham. They are checks on excess, governors, balance-wheels, on the vital engine—*ne quid nimis*—a proper exaltation and appreciation of the proportion that should obtain in all things, neither optimist nor pessimist, but a benign nemesis laughingly cutting away all asymmetry. They are the same rational mind laughing justly and kindly at irrationality. Humility, the fine art of disillusion, is soundest when it has much humor in it; without humor it is likely to grow sour, to lack the joy and peace of God.

The humility that sees God in us can be very proud in God; and that is holy pride, not a vice. It is keen-eyed to see the good in the brethren, to grow curiously blended with charity, patience, zeal, and other virtues. Like charity it helps the healer of souls, the physician, any person that works for Christ's sake for the brethren, to see God through the mists in the sot's soul, and to persevere in patience until God comes back to His own. Who are you or I that we should despise any one that has been wet with the Precious Blood? Yet who are we not that we should not aspire to stand with unblinking eyes gazing into the face of God.

Other vices beside pride are avarice, lust,

and gluttony, which are the vices most opposed to the rational good of man. Avarice submits human desires to the lowest human good. Lust and gluttony turn man inordinately to those pleasures that are common to us and the brute; they lower the entire understanding and estimate of spiritual things, and temporarily or wholly destroy reason. Sloth is a disinclination for the mental and bodily exertion required to perform good works. The effects are malice (which here means a deliberate intention of doing evil), rancor, cowardice, despair, torpor of the will, and dissipation of the mind. It is opposed rather to fortitude than to temperance.

Prudence or Foresight, "the eye of life," sometimes called wisdom, is an intellectual virtue by which we recognize in any act what is right and what is wrong: the *recta ratio agibilium*. It is right reason, and regards imminent acting; art is right reason as regards transient making. Art looks to a fitting disposition of means to effect an end, prudence does the same thing, but judges also whether these means befit the agent himself, and are righteous or not. Art heeds only the external object, prudence heeds also the artist, makes the will good.

Prudence is the governor of the other vir-

tues; it keeps them in the golden mean between excess and defect. To act prudently, as far as we are morally obliged so to act, requires only that we are certain, absolutely or probably, that the action we are doing is righteous in the agent himself under the given circumstances. Prudence deals with means rather than ends; it applies naturally known principles of morality in particular cases. When the appetites are well disposed by the other cardinal virtues they become, as it were, correct premises for the deductions of prudence.

Prudence is not the same as Conscience. Conscience is a faculty or an act whereby we judge of the morality of our deeds; prudence is a virtue that perfects this conscience and inclines it to judge rightly as to the honesty of our acts. Conscience is the intellect, not the will, judging of the morality of spiritual acts; it is a practical judgment on the morality of an act that is here and now to be done. Prudence is a correct estimate of all the circumstances that affect the morality of an act, and fits conscience to make the practical judgment.

The integral parts of prudence are memory and experience, understanding, docility and sagacity in accepting the counsel of others, foresight, circumspection, and caution. The vices opposed to prudence are imprudence,

rashness, inconsiderateness, negligence, uncautiousness, indocility, inconstancy in judgment, carnal foresight, cunning, deceit, fraud, and solicitude for temporal things.

In a consideration of the virtue of prudence the important good of education, intellectual and moral, and the evil of ignorance, at once becomes evident. “Wisdom is glorious, and never fadeth away, and is easily seen by them that love her, and found by them that seek her. The beginning of her is in the most true desire of discipline; and the care of discipline is love; and love is the keeping of her laws; and the keeping of her laws is the firm foundation of incorruption; and incorruption bringeth near to God. Therefore the desire of wisdom bringeth to the everlasting kingdom.”¹ Persons that are well educated intellectually and morally are inclined to righteousness; they know too much to be evil; they are not neurasthenic because they can control their explosive nervous system; they are not drunkards. Proper education is a preventive of intemperance. Wherefore we should say with Solomon: “God of my fathers, and Lord of mercy, who hast made all things with Thy word, and by Thy wisdom hast appointed man that he should have dominion over the creature that was made

¹ *Wisdom*, vi.

by Thee, that he should order the world according to equity and justice, and execute justice with an upright heart: give me wisdom, that sitteth by Thy throne, and cast me not off from among Thy children."

As wisdom is the chief among the intellectual virtues, and charity the first among the supernatural virtues, Justice is the most important of the moral virtues. Justice is the constant, perpetual habit of giving every one his rights. "Habitus secundum quem aliquis constanti et perpetua voluntate jus suum cuique tribuit."¹ The other virtues refer to the agent, justice to God and our brethren. It is a virtue of the will which acts; we are just in what we do rather than in what we know. It consists in doing good and avoiding evil and both with respect to our fellow man; thus only is equality between ourselves and others preserved, which is the essential quality of justice.

The virtues allied to justice are religion, piety toward parents and country, reverence or observance with its subdivision obedience, truthfulness, gratitude, fidelity, protection or vindication, liberality, courtesy, friendship, love of God and man, mercy, equity which inclines us to act against the letter of the law when a higher reason is at stake. The vices

¹ Saint Thomas, 2. 2., q. 58, a. 1.

opposed to justice are injustice, homicide, detraction, theft, contumely, and the contraries of the other virtues enumerated above.

Justice may be legal or general, distributive, and commutative. General justice inclines a person to give the community its rights from a motive of attaining the common good. It should be primarily in the legislator and secondarily in the subject; it regulates the duties of the citizen toward the community. Distributive justice divides the benefits and burdens of the community in due proportion among its members. It is opposed to unjust privilege, partiality, nepotism, and the like; and it is a virtue of superiors, rulers, legislators; it regulates the duties of the state toward the citizen. Commutative justice inclines the private citizen as such to give another private citizen his rights.

Laws that directly determine property, dominion, oblige in conscience before any judicial decision, unless the law is contrary to the natural law. The state can oblige in conscience when a law is really necessary for society. A law levying an exorbitant, needless tax, however, carries no moral obligation. If a government puts an exorbitant duty on a certain imported article to protect a group of manufacturers unjustly, smuggling of such an

article is not immoral, provided no immoral accidental circumstance, as perjury, risk of life, or the like, is involved. The obligations of justice that affect a man as regards the community, his neighbor, and his family, are evidently very important considerations in a study of intemperance.

Fortitude is a deliberate acceptance of danger and a bearing of labor—"Considerata periculorum susceptio et laborum perpessio," is Cicero's definition. It regulates the irascible passions, and holds man firm between fear and rashness; it is aggressive and patient. As temperance keeps man from excess in the pursuit of what pleases his concupiscent appetites, fortitude withholds the faculties from irrational aversion to the evil he dreads. Fortitude extends even to the sacrifice of life for those things that are really better than life to man, who is also a spiritual being: that is the strict meaning of the virtue.

Lessius¹ defined fortitude as the "Virtus quae motus animi in rebus terribilibus, praesertim periculis mortis, sustinendis vel repellendis moderatur"—the virtue that controls the movements of the soul in bearing or resisting dreadful agencies, especially the danger of death. In this definition fortitude differs from

¹ Lib., 3., c. 1., n. 11.

the firmness of soul as regards moral good that is an element in every virtue; it has a danger of death in view where there is especial difficulty to keep the mind steady. In such danger fortitude may take on qualities of piety, patriotism, faith, legal justice, and so on. Fortitude, however, extends also to less heroic deeds. If the intention in danger is evil, the quality of mind may be rashness, ferocity, or similar vices, but not fortitude. Fortitude supposes the danger before us is understood as a surmountable difficulty, and the intention must be to act as God wills. Those that risk danger to life through ignorance, passion, vanity, for gain, and the like motives, do not exercise fortitude. One must be "*Audace sì, ma cautamente audace,*" bold, but cautiously bold.

The chief virtues allied to fortitude are magnanimity, patience, and perseverance: these are the integral parts of fortitude. Magnanimity inclines us to what is great and heroic in all kinds of virtue; fortitude in deeds that in themselves are noble. Strictly this virtue does not consist so much in exercising a virtue to an heroic degree through admiration for the virtue, as because such a mode of action is proper to a noble will of itself. Magnificence is very near magnanimity: it is a virtue of those rich in mental or material gifts who wisely ex-

pend riches or great talents to effect vast good.

The vices opposed to magnanimity are pre-emption, ambition, vain glory, pusillanimity, or meanness of soul. Presumption is really a species of pride: it consists in presuming to do or to assume that for which we are unfitted or unworthy. Ambition is an inordinate desire for unmerited dignity and honor. Vain glory is an inordinate desire to display real or false excellence. The subspecies of vain glory are boasting, hypocrisy, and ostentation. Pusillanimity is a shirking of responsibility or other good, through cowardice. It is an inclination for things mentally inexpensive.

Patience, bearing with evil, suffering in peace, is serenity of soul in opposition to grief arising from difficulty in doing good. "Blessed is the heart that is pliable for it will never break," said St. Francis de Sales. "The patient man is better than the valiant; and he that ruleth the spirit than he that taketh cities." Longanimity is practically a species of patience, whereby the soul is strengthened against a definite, protracted, or long impending evil. Impatience is the opposite of patience, but the term is often used for petulance, peevishness, and anger. Worry is impatience.

A common delusion is that worry is unavoidable. Persons addicted to this vice agree with

you that it is foolish, but they maintain it can not be driven from the soul. That it can not be avoided is as false as to say unclean thought can not be avoided. Worry is a vice, destructive of the peace of God (without which all virtue is lame) extremely foolish, imprudent, cowardly, base. Saint Teresa used to say "Let naught disturb thee, let naught affright thee,—all passeth!" Our Lord Himself said¹ "Let not your heart be troubled, nor let it be afraid." There is a class of folk so addicted to this vice of worry that when all is well they worry for fear some evil *might* happen—*Vix tenet lachrymas quia nil lacrimabile cernit.*

A dangerous error in any effort toward a better life is to associate virtue, or right living, with absence of joy; to think that a bilious countenance is a sign of sanctity. "Drive away sadness from thee for sadness hath killed many, and there is no profit in it."² "As a moth doeth by a garment, and a worm by the wood, so the sadness of a man consumeth the heart."³ Sadness discourages, makes a man rough, irritable, uncouth, unkind; it turns him toward sensual solace. "The soul can never be without pleasure," said Saint Gregory. "It must take it either in the things of heaven, or

¹ John, xiv, 27.

² Ecclesiasticus, xxx, 24, 25.

³ Prov. xxv, 20.

in those of earth.” Since we must seek pleasure, joy, it is only rational to seek it along the right road. Serve ye the Lord with gladness; come in before His presence with exceeding great joy. Goethe said “*Die Freudigkeit ist die Mutter aller Tugenden,*” joy is the mother of all virtues.

Worry, sadness, often has a large physical element in it. It may be caused in no slight degree by autointoxication; but when the irritation or depression is allowed to enter the mind this extension is inexcusable. We may not be able to keep irritation out of the body, but we can and must keep it out of the mind. Pride, anger, vanity, cowardice, sloth, disobedience, lack of confidence, and all vice have for wages ultimate sadness, depression; and they must be shunned if we would be glad of heart. The sorrows of Réné, Werther, and Byron, which are the same in all ages, are mere symptoms of moral rottenness, effects of irrational yearnings unfulfilled or fulfilled. “A wicked heart shall be laden with sorrows.”¹ The world is so bitterly sad because it has wandered away from God, Who is peace and joy.

The gladness of God is connected with the peace of God, which is a tranquillity that comes with the fullness of the Messianic gifts. The

¹ *Eccle.* iii., 29.

Pax Christi, which the Church continually prays for, is the sating of man's infinite desires with the riches of God. This was in the announcement by the Angels at Bethlehem on the first Christmas night, "Peace on earth to men of good will," and it was in the discourse at the last supper where our Lord said, "Peace I leave with you, my peace I give to you: not as the world giveth, do I give to you. Let not your heart be troubled, nor let it be afraid."

Perseverance is a stable adherence to a rational principle of good. It overcomes all obstacles to good; constancy is perseverance with special regard to the protracted character, the long duration, of the good effort: it is practically the same virtue as perseverance. Mental dissipation, which is opposed to concentration, day-dreaming, that lazy activity which keeps one busy at what is mentally pleasurable rather than industrious or useful (all genuine good comes through more or less painful effort); novel-reading as a mere dissipation, are all subtle opponents to perseverance in virtue, and it may require a high degree of fortitude to tone up the soul after their enervating influence has been at work. There is also a laziness that has a large physical element in it, a lack of nervous tone, which tends to drag a man down to emptiness of soul, and

this must be resisted and treated like any other evil physical tendency. Sometimes a physician by a judicious tonic, or other drug, can cure many spiritual ills. Nearly all scrupulosity, for example, is physical in origin. I have seen scrupulosity as an early symptom in Bright's disease and in tuberculosis.

Savages and children lack perseverance, which is an effect of education and of grace. Some persons like a salaried position because such work does not require mental effort. For the same reason men fall readily under that despotism of trades unions which limits them like machines to piece-work. Lawyers, physicians, teachers, and priests, commonly degenerate into doing routine work, into mental ruts and stagnation, through lack of fortitude; and make themselves believe that mechanical autonomy is human progress in virtue. The world is full of good people that never grow better people after God's heart; the lukewarm that God finds hard to stomach.

Fortitude, strength of soul, bravery, pluck, is the one virtue of a man which is admitted as a virtue by every human being, civilized or savage, virtuous or criminal, pagan or Christian. Those that deem temperance impossible, and justice foolishness or weakness, not

only admire fortitude, but they try to aim at it or its counterfeit.

The vice of effeminacy, as ordinarily understood, is opposed more to fortitude than to the other cardinal virtues, although it also has phases of intemperance. It is much more common in women than in men. In men it is always despised; in women it is condoned by the thoughtless or even admired, but it is always a despicable vice nevertheless. The dawdling, mincing, simpering, candy-munching, gossiping, fluffy girl or woman, is a vicious yet pathetic parasite, fit only for the Limbo of Babes; yet God intended that a woman hoe her row just as honestly as a man does; and He will hold us accountable for the education we give girls which makes that flabby jellyfish, the effeminate woman, possible. Fortitude is not a virtue for men alone; it is as incumbent on the woman as on the man. “Who shall find a valiant woman? Far, and from the uttermost coasts is the price of her. The heart of her husband trusteth in her; and he shall have no need of spoils. She will render him good, and not evil, all the days of her life. She hath sought wool and flax, and hath wrought by the counsel of her hands. She is like a merchant ship, she bringeth her bread from afar. . . . She hath considered a field, and bought it: with

the fruit of her hand she hath planted a vineyard. She hath girded her loins with strength, and hath strengthened her arm. . . . She hath put out her hand to strong things. . . . Strength and beauty are her clothing: and she shall laugh in the latter day. She hath opened her mouth to wisdom and the law of clemency is on her tongue. She hath looked to the paths of her house, and hath not eaten her bread idle. Her children rose up and called her blessed.”¹ Did you ever know a romantic woman that was a good housekeeper?

¹ *Proverbs*, xxi.

CHAPTER IX

THE NATURAL MORAL MEANS FOR CURING DRUNKENNESS

Obviously the cure of drunkenness is in sobriety, but sobriety is only a part of temperance; again, temperance is one of the four cardinal virtues which are so unified that one can not exist, in ordinary perfection, without the presence of the others. Hence, if a drunkard would become permanently sober, cured of his moral and physical disease, which implies also injustice, imprudence, and moral weakness, he must learn to practise all the cardinal virtues. It would seem to be more direct to grasp directly at sobriety itself, but unfortunately sobriety can not stand alone. Some drunkards may fail in only one-third of the virtue of temperance, which is made up of chastity, abstinence, and sobriety, but they always are wanting in justice, prudence, and fortitude.

The drunkard may be very desirous to reform his life, or merely more or less willing to reform it; or he may be indifferent, or op-

posed to the reformation. He may be a natural man, that is, a pagan; or a Christian with enough faith, or enough common sense, left to render him unwilling to accept justification and all that this implies; or, again, he may be a drunkard who temporarily is in a state of grace, but so weak in virtue that he will presently return to his vomit. The possible permutations of the state of drunkenness are so varied that we rarely have two cases just alike, and a single method of treatment will not meet every condition.

If a drunkard is indifferent, or actually opposed to reformation, the first step with regard to him, is, of course, to convince him during a lucid interval of the necessity of sobriety. The patient must have the medical treatment described in Chapter V. If he will submit to this voluntarily so much the better; if he will not, he should, if possible, be forced to submit in a hospital. We should strive in every State in the country to have passed legislation like the New York inebriate law (the methods tried in other states is futile) so that we may get these hospitals. The agitation is to be dignified, freed from cant, very earnest, and not of a kind to antagonize the men engaged in the liquor traffic. These liquor-dealers are extremely powerful financially and politically, and

they can and will oppose successfully any legislation that injures the trade directly, but they are indifferent to legislation that aims only at the reformation of the drunkard. They may be willing even to further such attempts. These hospitals or institutions are absolutely necessary for any start toward the reformation of certain classes of alcoholics.

All physical irritations like eye-strain, low or high blood-pressure, occupational fatigue, nephritis, tuberculosis, gastritis, exposure to sunlight and heat, and so on, should be removed when it is possible to do so. Many men are drunkards solely because of the irritation of a physical condition like a marked eye-strain, and I have kept such men from drink two and three years at a time merely by fitting them with proper glasses.

The drunkard should get away from evil environment, from companions that drag him down. To do this he must, if need be, change his work, leave the street or town he has dwelt in, to escape temporarily at least, from boon companions, nagging kinsfolk, poverty, worry. Here, again, the state institution is one of the best means we could obtain to help him. When we have removed as far as possible the occasions for sin, there is a chance for moral treatment.

The spirit prevailing in any institution for the cure of alcoholism must be close to genuine Christian charity, or at least to true humanity and exact science, as we can make it. The punitive spirit of a jail will not be successful, yet there must be physical restraint, but physical restraint padded with velvet, concealed. This restraint must be like that of the windows in a German insane-asylum, where the sashes are made of iron and take the places of bars. Only the best citizens, clerical, medical, and lay are to be set in authority. The politician, the police, the professional saint, the female agitator, are to be kept out, except as patients.

There are drunkards that will not reform even after physical confinement for three or more years. Such persons should be restrained indefinitely. No man has a *right* to be a drunkard under any possible provocation or weakness, and society is obliged to prevent drunkenness if it can. It always can in the individual if it wishes to do so, simply by locking him up; and it has a right and an obligation to lock him up if no other means are effective. Talk about "the sacredness of human liberty" in this connection is sentimental nonsense. Liberty is an opportunity of doing what we have a right to do, not of doing what every rascal would like to do. Liberty has as many chains in it as an

ironmonger's shop, and not a few of them are very rough and rusty.

While the alcoholic is under restraint he should be obliged to work for his own support or that of his family. He is a criminal, as much as the thief is a criminal, and if he will not relinquish his crime decently he is to be forced into reasonableness. It is not necessary nor expedient to put every drunkard under restraint in an institution. Only the malicious drunkard, and the utterly weak-willed chronic alcoholic require this treatment. There are in every community poor drunkards who can not be treated at home; the ordinary hospital will not take them in;—these require the state institution to get a start on the road to health.

Suppose now that we have by medical treatment relieved the drunkard, temporarily at least, of his craving for alcohol, and have awakened a willingness to rise from the wallow: the next step in all cases is to brace his will.

Here the drunkards fall at once into two vast classes—first, that of the natural man. One in this group thinks there may possibly be a God, as the newspapers say there is, Who rewards and punishes in a future life; but he is inclined valiantly to doubt all this as a fact, especially when the weather is good, and fearfully to

think there may be some truth in it when danger, death, or a torpid liver, are in evidence. He can not deny the value and truth of a virtuous life, for this is plain common sense, everyday sanity; but because he is very ignorant he is "above creeds." This natural man is often graduated by a college, but there is no ignoramus more dangerous, irritating, stubborn, conceited, blinded by light, than the ignoramus with a degree, especially if he comes from a college which is itself "above creeds." It is a grave error to confuse wisdom with any college, but it is a crime to do so when the college has gone over into the dementia of irreligion. The natural man has no supernatural aims, no supernatural life. He is unfit for supernatural helps to strengthen his moral weakness. He is a pagan sinning against light. Nevertheless we are our brother's keeper, and we must try to cure him of his drunkenness. He is not a hopeless case by any means.

The second class is that of the Christian who has fallen into drunkenness and into the cellar of Christianity, but who is still in the house. This kind of man is always curable if he will only let us do so much as to carry him on a stretcher upstairs into wholesome quarters.

Each of these classes of drunkards subdivide into about seven types of drunkards.

There is the continual drinker, the periodic drinker, and subdivisions of these groups. Among the continual drinkers, a very common class is made up of men that are not seldom important in the professions and in trade, or as artisans; valuable citizens, who gradually, and without a clear appreciation of the danger, became chronic alcoholics to an extent very difficult to cure. At meals, after business hours, in clubs, under erroneous notions with regard to alcohol as a tonic, as a help to do severe work, and so on, the intoxication developed insidiously until a craving for the drug grew upon them which they can not shake off. For a time the "moderate" use of alcohol appeared to improve the health, to impart vigor. The improvement in health in these cases is largely judged by taking on weight; this fat, however, is an effect of faulty metabolism induced by the alcohol. It is ill health, not better health. The alcohol prevents the normal elimination of tissue waste, and the retention of effete substances in the body poisons the cells, apart from the direct action of the alcohol itself on the cytoplasm and nucleus.

The patient grows vaguely uncomfortable, irritable, "nervous." Alcohol soothes this disquiet; then more alcohol is needed to still the growing uneasiness; until finally there is

apparently no peace, no possibility of doing anything, no throwing off the morning lassitude, without the morning drink. As the disorder increases, two, then three, four, drinks are needed to get upon a business footing, and the man is a confirmed chronic alcoholic. His first shock comes when a life insurance examiner rejects him as a risk. He "swears off" for a few weeks, then the craving overpowers him, and he gets undoubtedly, scandalously, drunk, and settles down to the old life.

He is so saturated with alcohol that an attempt to reform, to abstain from the alcohol, throws him into violent irritation, and he must drink to find relief, as this method is the only means with which he is familiar. The functional derangement at first is oftenest a chronic gastric catarrh, with an intense general toxic condition of the body.

The great majority of chronic alcoholics in this class are not neurotic degenerates at all. They may be of good families physically, have high aims socially, be to all appearances really good citizens. They may have very fair will power, and if the stomach inflammation is treated, the alcoholic toxin eliminated, genuine determination can cure these cases permanently after a few weeks' work.

A second class of continual drinkers, and a small group relatively, have a congenitally defective physique, an explosive nervous system, a bad inheritance. They had alcoholic or neurotic ancestors, and their youthful moral education was left to school-teachers. At home the moral education consisted of an occasional spanking, as often undeserved as deserved, when the father or mother was unusually irritable. The father paid the school-bills scrupulously; and the more effort this payment cost, the more complacent his conscience. If there is one truth in the world it is, you can neither save your own soul nor that of your child by paying a school-teacher's fees; but so few believe this platitude that if God did not play father and mother for the shirkers there would be little morality left in the world. We have had bad luck with our fathers and mothers ever since Adam and Eve failed in that profession. It requires a special grace of state to be a successful father or mother, and many folk do not respond to grace.

There is a constant physical irritation nagging at the neurotic alcoholic: a neurasthenic tendency, a vague unstable state of the nervous system, eye-strain, a tendency to melancholy, low blood pressure, fits of rage with depressing consequences, sentimental unbalance

of the emotions due to insufficient or incorrect mental or moral education, latent renal or pulmonary disease, and so on. In a fit of irritation from one or other of these causes the sufferer finds temporary relief (at first) from alcohol, and thus the process of drunkenness begins, with its cumulative physical, and moral degeneracy, until at last such patients must keep constantly saturated with alcohol to have any comfort at all. These cases are much harder to cure than the first class, but they are curable. The neurotic disability, of course, adds to the difficulty, and it is often impossible to remove this disability. A genuine case of neurasthenia commonly requires a whole year for removal when it stands alone, but when it is complicated with chronic alcoholism its cure is more difficult, and it in turn makes the cure of the alcoholism harder. There is always something wrong with the mind of a true neurasthenic, and he does not take moral medicine well.

A third class of regular drinkers are the morally perverse, who drink for the pleasure they think they experience while under the influence of alcoholic liquor. They are selfish, malicious, base-minded, conceited, foolish, yet responsible; and they may not be neurotic.

Scarcely anything short of a miracle cures this group.

The periodic drinkers, those that remain for a time without taking any alcoholic liquor whatever, but who break out into temporary debauchery, vary in type: they may be (1) dipsomaniacs; (2) persons with good will power but with an inherited or acquired thirst for alcohol, to which they yield at times; (3) the unstable, neurotic person, who has no desire for alcohol until he takes a drink with companions; then he goes off on a temporary debauch; (4) the moral coward that becomes drunk "to drown sorrow."

Neurologists agree that there is such a disease as true dipsomania, which is a periodic insanity taking the form of an uncontrollable desire for alcoholic drink. Many alienists maintain that true dipsomania (a very rare disease) is due to an obscure structural brain lesion or inherited defect. That such a form of dipsomania exists as a distinct idiopathic condition seems practically certain, but most dipsomaniacal outbreaks appear to be excited by derangements such as an acute intestinal toxæmia, and this latter form may be removed by removing the toxæmia. The idiopathic form would not be amenable to treatment except that when the patient has premonitions of an attack he

should place himself under physical restraint in some institution.

Persons of the second class of periodic drinkers, with good will power but with a violent desire for alcohol, are especially responsive to treatment, and are often cured of their besetting tendency, especially when removed from temptation.

Those in the third class, who start into debauchery after a social glass, can be cured by removing them from evil environment, and building up their wills.

There is cure for even the moral coward, the fourth class, in the training of his will, but this kind of delinquent makes severe demands on the patience and charity of those that try to reform him.

All these classes from worst to best, are flabby-willed; so much so that their alcoholism is only a phase of their general moral ability. The drunkard is falsely proud, selfish, sensual if not openly unchaste, a waster, irreligious or sentimentally religious, pathetically foolish, and so on, through all the lists of evil. If he is not very malicious he is so not through virtue, but through timidity. He is too flabby to be a vigorous scoundrel. His family say, "He would be such a charming fellow were it not for that one failing of drink!" That is nonsense.

He is a lukewarm rascal, as all drunkards have been since the days of Noah.

It is most important that the drunkard and all society be convinced that drunkenness is nothing but rascality pure and simple, and most complex, far-reaching rascality. Drunkards' families die out commonly, but some do not, and there are sufferers in the world to-day made such by the alcoholic rascality of some fellow who went before the Judgment Seat a century ago. All wickedness is weakness, but weakness does not excuse wickedness, or make the wicked amiable. Fortitude is a virtue, and it can be the chief virtue of a whiffet of a woman physically; weakness is one of the opposing vices to fortitude: a good man is a strong man, not a weak man; the criminal is a weak man, one not strong enough to resist passion, and weak through his own fault.

There is no reason for weakness in the moral order, or rather no excuse, because it is as easy to strengthen the muscles of the soul as the muscles of the body: easier, for sometimes the muscles of the body are past strengthening, the muscles of the soul are never in that condition. The drunkard is slothful morally, he is a shirker in the workshop of the soul; he is a quitter that sneaks out of a fight when he has been hit. He plays the baby in the face of fortune, and

whines about his "weakness," as an excuse for his disgusting cheapness of soul. He is a typical cad; he does not know the meaning of the term "gentleman." What his wife and family suffer in bitter shame, dishonor, and deprivation is as the barking of distant dogs to him. Is he a military officer, he risks his sacred charge, the lives of his men, the glory of his country, that he may have the high pleasure of discoursing fustian with his own shadow. If a sea-captain he lets the souls in his ship's hold graze destruction with lifting hair whilst his shallow laugh cackles over an emptying bottle. If he is a father he neglects or beats his young where a wolf would protect its whelps. If he is a priest he turns the awful sacrifice of the Precious Blood into a morning dram to soothe his queasy guts. And you call these horrors, weakness! Then, Thirst of Christ on the Cross, save us from weakness!

One of the noblest traits of man is strength. "Throw me I will yet stand!" is the only cry worthy of a son of the strong God, as every man is by adoption. Our business is to fight; to yield to no power of earth or hell, and surely not to the cravings of our own bellies. We are to stand with head up and take a buffet even from the All-Father Himself, and laugh in the sun, not whine about weakness; to stand shoul-

der to shoulder with the brethren, angels and men, in the fight against the brood of darkness; afraid of nothing but only of cringing before our own passions. If we fail in this we are renegades; and no counterfeit scientific blather about weakness and heredity will restore the glory lost or excuse our baseness: and we need not fail, because, God aiding us, we *are* masters of our fate.

In dealing with the individual drunkard, after the medical treatment, we must classify him, before attempting the application of moral means. Let us suppose him to be an ordinary pagan, natural man. Whatever group of drunkards he belongs to, his will is weak, and his cure is in building up the virtues. As he will not go beyond the moral virtues he must work with these. He is lacking in practically every quality that is good, and as all the virtues are a chain no stronger than its weakest link, he must replace every flaw with sound metal. The natural moral virtues are all to be acquired, but for the sake of clearness they should be considered separately.

Preliminary general facts and rules are to be set out clearly. For example, the patient is not to lie abed in the morning. Payot¹ says shrewdly: "Tell me how long you lie abed in

¹ *L'éducation de la volonté.*

the morning and I shall tell you whether or not you are morally strong." He is to sleep in a well ventilated room, arise early, and leave the bed at once. He should then stand in warm water and go over his body quickly with a sponge dipped in cold water, rub himself briskly and dress quickly. Then take a light breakfast, and get to work as soon as possible. No lounging about, no dawdling over newspapers. If he has no regular work, or is out of employment, he must make work, if it is only reading history, or seriously taking up physical development.

He would be better theoretically without tobacco; but it may be better in the beginning not to cut off tobacco entirely, as the lack of it in one accustomed to it is very irritating, and this irritation may be in itself an additional temptation to drinking. Any excess in smoking will disturb the stomach, cause intestinal intoxication, and pull him down toward alcoholism again. Cigarette smoking, because it is always excessive, must be abandoned. After the third week he must cut out the use of all tobacco, if only as a moral exercise.

In the day's work he should fight against idleness; he is not to make plausible excuses to himself for leaving his place of business. His temper, irritability, peevishness, are all to

be kept in check despite constant lapses. Resisting the temptation to despair after lapses of any kind is one of the best moral exercises we have. Tendencies to gossip, to detraction, and scandal-mongering, are to be held down. Regular physical training is to be kept in view in the use of food (gluttony is intemperance), tobacco, drink, and the sexual relations. If the patient is unchaste he will surely fall back into the other forms of intemperance. Consequently he should read only clean books, shun indecent conversation, keep away from the theatre, forget the other sex. As a rule he should not do what he likes to do, but force himself toward what does not please him.

He should not read novels as a pastime, because this is a kind of mental dissipation, and he is to tend toward mental concentration. He should refrain from imaginative day-dreaming for a like reason. If he is capable of understanding music he should be very careful to shun its sensual, enervating forms, which are very powerful moral depressants. Going once to hear sublimated sensuality like *Tristan und Isolde* may, in some men, destroy the virtue won by months of toil; it sets other men asleep. Every one is in danger of living in words, mean or beautiful words, but only words, not deeds; and romance and music are seldom

deeds. His relaxations are to be innocent and chosen with great care. He has had his poor fun, let him now take his medicine like a man. The old haunts and companions are to be shunned.

The three acts of prudence are investigation, judgment, and precept. The first act is a careful investigation of the various means that will lead one toward the end, which here is sobriety: their moral honesty, their fitness in general and in every detail. The five chief factors in investigation as a part of prudence are: (1) recollection of past experience; (2) an understanding of the present condition; (3) foresight for the future; (4) docility and common sense in taking the advice of those competent to give it; (5) prayer to God for light, a factor from which even the pagan, natural man is not excused. The experience of the past with all its sordid bitterness is to be kept alive, but not unto discouragement. The understanding of the present conditions, all the minutiae of conduct in the day's work that will help or hinder the progress toward sobriety are to be plotted out, written down, rehearsed, memorized, and renewed day by day: not in a vague general fashion, but in practical details, as regards places, times, persons, and all other circumstances, even to the going across the street to

avoid the smell coming from the open saloon door, or refusing alcohol in the physician's tonic. Quarrels should be foreseen and avoided, physical exhaustion is to be fore stalled.

The patient should seek the advice of a skilled physician, or an intimate friend, and mistrust his own opinions and plans. He has certainly been foolish enough while a drunkard to make all claims to wisdom doubtful if not impudent. A man that can write and talk like Solomon for the guidance of others, may be unable to guide his own feet in the right path for two city blocks. We must get outside a house to see it.

The second act of prudence is judgment. After we have considered all sides of the matter before us the practical reason pronounces judgment as to what is right and opportune to do. There should be freedom from prejudice and passion in the judgment; secondly, a deliberate consideration of all motives and circumstances conducive to the end in view; and lastly, a firm judgment or decision. Helps in making such a judgment are good sense, which judges what should be done according to the obvious rules of reason and perspicacity, which goes beyond into more subtle motives and rules.

The final completing act of prudence is the

precept or command of the practical reason, which goes beyond judgment to command, and this to deed. This is an important act, and promptness in execution is practically essential.

Vices to be shunned here are precipitation, hurry, exploding at half-cock, jumping at conclusions without diligent meditation over the means. Again, neglect here is a serious vice, a defect of promptness in the will to follow the decision of the judgment. Inconstancy is another vice, commonly arising from passion, which abandons a good judgment, and wobbles back to the old wallow.

Prudence is not a weapon to be used at the beginning of a campaign and then flung away: it must be in operation always, taken up each morning with the day's tasks, and a defense over us even in our sleep.

Pride goeth before a fall, and it is poisonous to prudence; hence the necessity of humility as differentiated from the base vice diffidence. Diffidence or cowardice is really an opponent of fortitude, manliness, but it rots humility also. The drunkard, of all men, should acknowledge his flabbiness honestly, at least to himself. The fact that he must never, under any possible incitement, take even a teaspoonful of alcoholic liquor, at any time in life, can

not be insisted upon and reiterated too often. The experience of the whole world is against his childish pride in himself, and to disregard this experience is a blundering sin. Humility is a true friend that gives us the gift of seeing ourselves as others see us.

As prudence, which is practically wisdom, is the chief intellectual virtue, Justice is the leading moral virtue. Justice regards God and our brethren, but, in a manner, it includes also ourselves in its constant habit of giving every one his rights. In its primary meaning it connotes the inviolable moral power, which can not be violated without sin, of having, doing, or requiring anything. In this sense we say one makes use of his right (*jus*), or he transfers his right to another. Secondly, it refers to the object of that power—what is just, due to another, the title of the other to the right. It is moral in as much as it is reasonable; it is inviolable because of man's dignity and independence, which consist in this that he should freely tend toward his proper ends, not be led to them; and as a consequence we have rights vested in those means that help us to our end.

The moral dues of our brethren involve charity, mercy, gratitude, veracity, and related virtues. The legal dues of society and God reach out to the virtues of religion, piety, and

obedience. The drunkard's family and friends have rights to charity, gratitude, observance, which his vice injures. There are few unjust, uncalled for, gratuitous, selfish injuries worse than the pain the drunkard inflicts on his kin and friends. If his vice does not deprive his kin of actual pecuniary means, it, all the more, hurts their love, their rational desire for decency, their honor, their peace of mind, the moral education of children. It scandalizes the little ones, and "Whoever shall scandalize one of these little ones who believe in Me, it were better for him that a millstone were hanged about his neck, and he were cast into the sea."¹

Drunkenness injures the justice due to God and society. It contemns law, it shirks responsibility and duty, it offends public decency and morality, it infects the weak observer, it leads to the injustice of unchastity. It deprives God of His right to adoration, reverence, and love. It blots out prayer, which is a law of necessity. It is a kind of malicious idolatry that sets up a gross passion above the worship of the Deity, and kills faith, hope, charity, and sanctifying grace. It often inclines to profanity and blasphemy, cursing, sacrilege. It unfits a person in a responsible position, a parent, judge, physician, military officer, priest,

¹ Mark, ix., 41.

teacher, and the like, from doing justice, or turns him to grave injustice, for which he is obliged to make full restitution in this life or the next. It breaks vows binding before God. The worship due to the Creator is prevented, or made sacrilegious by the drunkard, who may go through the forms of worship while his eyes are turned back to offal. It wrecks the drunkard's body; and if he is a father it inflicts horrible suffering on generations born and to come: idiocy, imbecility, neuroses, tendencies to disease, stupor of mind. The drunken father or mother spills blood that clamors for vengeance to the powerful and just God, and He will and must get full satisfaction if it takes all eternity and all Hell to settle the score. If He did not get this justice he would not be God.

These are the terrible facts that the drunkard striving toward sobriety must keep before himself. If his memory is inclined to conveniently forget, he is to write these facts down as they touch him, reread them daily and apply prudence to justice: if he does not God will apply justice to him. It is not wise to balance a gulp of whiskey against the vengeance of the omnipotent God. The drunkard will be tempted, and sorely tempted to do this, and this insane temptation will be almost overwhelming, yet he has placed himself in a position which makes such

madness possible, and he grows resentful if we write him down an ass.

Next comes the virtue Fortitude, which, in its strict sense, is a virtue that renders one firm among very difficult circumstances, especially in danger of death. In the ordinary and commoner sense of the term, fortitude is stability of mind in clinging to moral good. This stability is rather a condition of every perfect virtue than a special virtue in itself. Fortitude in the strict sense of the term is a virtue seldom needed, but the allied virtues, constancy or perseverance, and patience, are always required by the person struggling to pass from drunkenness to sobriety. Actual fortitude, however, can come forward when a man must choose between losing a lucrative position and what is the support of his family rather than to do that which is morally wrong; and numerous similar examples will suggest themselves.

Where there is firmness in checking and mortifying passions we have the first degree of genuine fortitude. It commonly requires more strength of soul to conquer a passion than to conquer a human foe at peril of life. For certain alcoholics aiming at restoration of manhood to refuse alcohol becomes at times an act little short of heroism, although the deed itself appears to be trivial.

With the drunkard that would return to sobriety, fortitude, firmness of will, is so intimately joined to the various phases of temperance that a practical consideration of this latter virtue will also make clear what is to be done to acquire natural fortitude. As we said, temperance is the virtue that so restrains the appetites for sensuous pleasure, especially taste and touch, that the will does not, for the sake of these pleasures, abandon good, but rather is established therein. No pleasure in itself is evil since it is a means provided by God to attain an end; and to enjoy a pleasure as a means to the end intended by God is good; to centre upon the pleasure, however, for itself, to the neglect or subversion of the end, to set up the pleasure as an end, is a deordination that is sinful, and every deordination works evil.

Pleasures of taste in food and drink are means toward an end, which is the preservation of the individual; pleasures of touch are means toward an end, which is the preservation of the human race. The business of temperance is to keep these two pleasurable means in their proper place and degree as means, and not to let them become ends in themselves.

The first law of temperance is that all pleasures which are in man's use are to be re-

ferred to some necessity of life as an end. They must not only be referred to this necessity as to an end, but whenever that end is missing they have no right to existence. As soon as we begin to eat or drink solely for the pleasure in taste as an end, we are gluttons. To drink for the pleasure of taste alone is gluttony; to drink to unconsciousness is an independent deordination, called drunkenness. All the moral evil in the world arising from the concupiscent passions, all the effects of chronic alcoholism and unchastity, are results directly of that deordination which turns pleasures that are means to the two ends, the preservation of the individual and the preservation of the race, into ends in themselves. The intention is everything. The same physical push with the hand may be harmless play or murder, according to the intention, the end; an act of taste or touch may be harmless, good, or vicious, according to the ordination. The term *excess* in this connection connotes an accidental quantitative notion, but generally it means to wander out (*excedere*) of the regular order, apart from any question of degree.

The life of man operates partly as a spiritual principle, and partly as implicated with the sensitive appetites. We might for the sake of illustration call the first the soul and the other

the body. Natural order absolutely requires that the body and these sensitive appetites be subservient to the soul, as the spirit transcends the material. Deordination of this subservience is the cause of all our sins, faults, and imperfections; and the nobility of manhood consists in keeping these appetites under control of the spiritual part of man.

Abstinence as regards food, sobriety as regards drink, and chastity as regards the conservation of the human race are the same virtue temperance, energizing in three varying directions. The main virtue deals properly with sensible pleasures, but it also controls spiritual pleasures, by humility, which moderates hope and boldness; meekness which restrains anger; modesty, which regulates the movements of the body; studiousness, which is opposed to idle curiosity; clemency, courtesy, silence, simplicity, and economy. Intemperance, the vice that disorders the pleasures of taste and touch, has for its integral parts gluttony, drunkenness, and unchastity; and related to these are incontinence, anger, cruelty, immodesty, pride, curiosity, scurrility, contumely, gaming, ostentation, wasting, mental stupidity, foolish mirth, garrulity, and so on.

All these phases of temperance and intemperance react on one another, and the drunkard

will almost certainly have beside his drunkenness at least ninety per cent. of the other moral evils allied to main vice. To obtain sobriety, then, he should aim also at abstinence and chastity, and avoid the swarming broods of intemperance. Intemperance is a devil that is driven out by fasting.

The drunkard that would reform must abstain. He should eat plain food, and that to get the body into sound health. There is scarcely a person who is able to get the food he wishes to have, who does not eat at least a third more than he needs, provided his stomach is half prepared to do its overwork. A thousand stomachs break down from overexertion for one brain. If the patient indulges his appetite for food he thereby weakens his resistance to the craving for drink.

If he yields to unchastity he strengthens the very sensuous appetites he wishes to control. If he is unmarried he must be absolutely chaste in thought, word, and deed; if he is married, he must be absolutely continent, keeping close to the letter of the marriage-contract. The sooner he begins to look upon his body as a valuable unbroken horse the better; a horse full of strength and endurance, but vicious, treacherous; necessary to carry him across the desert of this world to safety *in Patria*, but which, if

uncontrolled will pitch him headlong to death. Such a brute is to be ridden with curbchain and rowels, and a well girthed saddle, until he has a respect for his master pounded into him. Some human bodies are snarling camels, or wild asses; and these are harder than horses to break.

So far we have been dealing with the drunkard that is a natural man, a modern pagan. Such a man can be cured, but he has not half the chance for cure the patient has who makes use of supernatural means. Father Theobald Mathew in the eighteen years between 1838 and 1856 gave the total abstinence pledge in Ireland, England, and the United States to about 7,000,000 persons, and effected an enormous moral revolution. The Chief Secretary for Ireland in 1840 said: "The duties of the military and police in Ireland are now almost entirely confined to keeping the ground clear for the operation of Father Mathew." The most remarkable fact connected with his work was that the vast majority of the drunkards among those who took the pledge from him observed it ever afterward. Father Mathew, however, kept always to the plan of using supernatural means, as he was a very saintly man. There should be no natural men nowadays. Any person at the present time, with floods of supernatural

light about him everywhere, who chooses to remain a mere natural pagan, is like a myopic girl, known to every oculist, who prefers groping and stumbling in almost complete blindness to the full vision she could have by using glasses, solely because glasses, she says, "do not look well on her." The world is full of natural men, agnostics that shut their good eyes and hang out a fakir's placard inscribed: "I am blind." There is an old English word that calls an idiot a Natural.

CHAPTER X

SUPERNATURAL CONTROL OF INTEMPERANCE

We have seen that there is a right and a wrong, a moral order, which we must and can observe obediently, and that it is difficult to force our lower appetites to keep within this order, but with the help of the virtues that are acquirable we are able, to a certain degree at the least, to submit ourselves. This conformity is never perfect if we rely on ourselves, if we remain content with the natural virtues; for these natural virtues practically end with nature, whilst man has also a supernatural end, and he needs supernatural means to attain a state that begins where nature ends, and to acquire possession of supernatural means to control natural passions.

Nature left to itself, mere reason, can see a glimmer of supernatural truth. It can, for example, arrive as Aristotle and other pagan philosophers did, at a convincing proof of the existence of God, at a notion of natural moral order, and so on. Even there, nevertheless, God's hand is beneath all these activities of the

so-called unaided mind. When however, we pass beyond a few great philosophers to the average citizen, the light of unaided nature is not much more than a tallow-dip in a windy night, distorting bogies into gods, or incontinently leaving man in blank darkness and despair. Unless the Lord keepeth the city he watcheth in vain that keepeth it. Nature is neither wholly helpless, nor wholly helpful. Of a thousand natural men who as drunkards hold up the haughty chin and say: "I can by my own will quit drinking," actually one man really quits, to even his own amazement; but the remainder of the mob are soon proved liars. With God's help, however, the whole thousand can quit. Destruction is thine own, O Israel; thy help is in Me.

Pelagianism, which exaggerated the capacity of unaided human nature, still exists as an apotheosis of self-conceit.

"Beyond this vale of wrath and tears
Looms but the horror of the shade,
And yet the menace of the years
Finds and shall find me unafraid !

"It matters not how strait the gate,
How charged with punishment the scroll,
I am the master of my fate;
I am the captain of my soul!"

Pretty rhetoric, but mere childish bragging. The men that really believe in themselves most are all in lunatic asylums, as Chesterton well observed. “Without Me ye can do nothing”: that is a supreme fact which no perorating can affect. “*Largire nobis quaesumus, Domine, semper spiritum cogitandi quae recta sunt, propitius et agendi: ut qui sine Te esse non possumus, secundum Te vivere valeamus.*”¹

Christianity, on the other hand, places a supernatural end before us, opens up to us an everlasting life with supreme and unalloyed happiness, but we can attain this end only by supernatural means. It gives also means more powerful than nature to overcome the evil tendencies of nature, to hold in the golden mean our passions. Both these means, those that fit us for everlasting happiness, and those that overcome the preliminary obstacles to that happiness, are graces. Friedrich Foerster sums this up thus: “In a man’s struggles against himself for moral development, the higher the aims he sets before himself are, the more impossible does victory become, if he has only ethical inspirations to rely upon. Morality thus cries for religion out of the depths of its own necessity.”

The adoption of sons, is Saint Paul’s term

¹ *The Missal.* Dom. viii, post Pent.

for this elevation of nature, this most important relationship of humanity to God, wherein grace is operative. "When the fullness of time was come God sent His Son . . . that we might receive the adoption of sons. The Spirit himself giveth testimony to our spirit that we are sons of God.¹ Saint John said:² "As many as received Him, to them He gave power to be made the sons of God." Here is the true higher brotherhood of man, which is founded on our sonship to God, for which our Lord prayed at the last supper—"That they all may be one, as Thou, Father, in Me and I in Thee; that they also may be one in Us."

This sonship is more than a mere title, more than a simple moral union; it is, as it were, in the blood. "Behold what manner of charity the Father hath bestowed upon us, that we should be called *and should be* the sons of God." The indwelling of the Holy Ghost is what unites man in sonship to God, but it does not make man identical with God in substance or act. Our acts are our own, not God's; if they were God's we should not be responsible; and since they are not God's, but are raised to the dignity befitting sons of God, they deepen our responsibility, and they deepen the respect we should have for ourselves. The action of the

¹ Rom. viii, 16.

² I., 12.

Holy Ghost is not ours, yet it is so intimately connected with our own that the effect is to be attributed to the Holy Ghost rather than to us. This presence of the Holy Ghost is described as substantial uncreated grace.

Sin, redemption, grace, are the three fundamental notions of Christianity, and grace is the means indispensable and divinely ordained to effect redemption from sin through Christ; it is a supernatural help of God for salutary acts, granted in consideration of the merits of Christ. Grace is divided, first, into actual and sanctifying grace. Actual grace is that unmerited interior assistance that God, in virtue of the merits of Christ, confers upon fallen man (1) to strengthen his weakness resulting from sin, and (2) by raising him to the supernatural order, to make him capable of supernatural acts of the soul, (a) so that he may attain justification, (b) persevere in it to the end, and (c) thus enter upon everlasting life.

The work of salvation is morally impossible without grace. This first affects the intellect, (the illuminating grace of the intellect) and suggests good thoughts. The Holy Ghost Himself, through immediate elevation and penetration of the powers of the soul, manifests to it in a supernatural light the eternal truths of salvation. That grace helps the judgment especially,

but it touches every phase of the intellect. Secondly, it affects the will, and obtains practical operative results after the illumination of the intellect. Grace of the will assumes the control of those vital acts of the soul we call the affections of the will, i. e., the passions, which centre in love. As far as grace is concerned, however, we exclude the passion of despair, which endangers salvation. Ordinarily when we speak of a moving of the will we mean a moving by the object, an inducement (*ex parte objecti, ad speciem*). In the exercise of any act, however, from the side of the subject, the will moves itself, the reason, and all faculties subject to it. Divine grace moves in both manners, objectively and subjectively, and that also as regards the intellect and the appetites.

Grace precedes the determination of the will and then coöperates with it—preventing (fore-going) and coöperating grace. Preventing grace of the will at first shows itself in spontaneous, indeliberate, unfree emotions, not proceeding from the soul itself but from God. It is “the voice of God,” the “knocking at the gate.” These unfree emotions elicit free salutary acts as preventing grace develops into coöperating grace, when the free will gives its consent. The free salutary acts are at the same time both graces and meritorious actions.

God works here with the will, so that both He and the will together do one and the same act,—God as the first cause, the will as the secondary cause. God elevates the faculty of the will to the supernatural order, and concurs in the good act.

There is a kind of grace called Sufficient, which is enough in itself to effect a salutary act if the will corresponds with it; and another kind of grace called Efficacious, which results actually in the salutary action. The effort to reconcile free will with the existence of efficacious grace has called forth as subtle and brilliant work as can be found in all theology. We know there is such a force as efficacious grace and that it leaves the will free, but how this is possible can not be fully understood. The chief systems or theories to explain the co-existence of efficacious grace and free will are the Dominican Thomism, the Jesuit Molinism with its modification called Congruism, and an eclectic system, medial to Thomism and Molinism, called Syncretism. That efficacious grace exists, and that it leaves the will free, are matters of faith, but they are also matters of mystery.

The Thomists say since God is the primal cause, and the prime mover, every act or movement of contingent secondary causes, or crea-

tures, emanate from the prime cause by applying potentiality to the act; but God, in keeping with the nature of things, moves necessary agents to necessary activity, and free agents to free activity. This divine influence seconded by the free intelligent agents is a physical predetermination of the free act, because of the free determination of the will is accomplished only by virtue of the divine predetermination. In the supernatural order efficacious grace is a physical premotion of the supernaturally gifted will to the performance of a good act. Now, the will predetermined to this free good act must correspond with grace (otherwise there would be no *efficacious* grace). The grace is not efficacious merely because the will actually consents, but the will consents because grace efficaciously premoves it to the willing and the doing of the act. To this explanation the Molinists and Congruists offer very weighty objections.

Actual grace beside being necessary is gratuitous; it excludes the notion of merit on our part. Grace does not find merits in existence, but causes them: "*Non gratia ex merito, sed meritum ex gratia,*" said Saint Austin.¹ Whatever nature does it can not rise to the height of justly meriting graces, because graces

¹ Sermon, 169.

are in another order, the supernatural, and God gives them gratuitously. A good dog, no matter how excellent, will never merit humanity which is beyond the dog's order. Even natural prayer does not merit grace as a right, although it appeals to God's mercy and liberality so that He may grant grace gratuitously.

The third quality of actual grace is its universality. It is for all men; not for the pre-destined alone, but for all. "For God so loved the world as to give His only-begotten Son; that whosoever believeth in Him, may not perish, but have life everlasting."¹ God gives grace enough to all men to save them, provided they will take it. "God is faithful, who will not suffer you to be tempted above that which you are able: but will make also with temptation issue, that you may be able to bear it."² "I desire not the death of the wicked, but that the wicked turn from his way and live."³

Efficacious grace produces Sanctifying grace where it did not exist, or retains or increases it where it is present. Sanctifying grace is the sole source of holiness and sonship of God, and when the term Grace is used alone it usually means sanctifying grace. Sanctifying grace enters the moral order, not as an act that

¹ *John*, iii, 16.

² *I. Cor.* x, 13.

³ *Ezech.* xxxiii, 11.

passes, but as a permanent tendency, which exists even when the possessor does not act; it is a *Conversio ad Deum*, a turning to God. This grace is the moral life of the soul; a privation of it is the moral death of the soul; and actual mortal or original sin deprive us of it.

The first step toward the reception of sanctifying grace is Justification; and both the beginning and the foundation of justification is faith. Faith considered objectively is the sum of truths revealed by God in scripture and tradition, and which the Church presents to us in a brief form in her creeds; subjectively, faith is the virtue by which we assent to these truths.

In any intellectual assent to truth, we have (1) the intellectual faculty that acts; (2) the intelligible object toward which the intellect is directed; (3) the evidence, either intrinsic to the object or extrinsic, which moves us to assent. In an act of faith we have (1) an intellect acting, (2) an object commensurate with that intellect, and (3) evidence (not intrinsic but extrinsic), which moves us to assent. If a person that has not been in Japan believes on the extrinsic evidence of trustworthy witnesses that Japan exists, he performs an act of natural faith. If he goes to Japan and sees the country he has intrinsic evidence, and not

faith. Dante, using the words¹ of Saint Paul says,²

“Fede è sostanza di cose sperate,
Ed argomento delle non parventi.”

Faith is the substance of things hoped for, the conviction [evidence] of things that appear not. The object of divine faith is God, the first truth in being; the evidence is God's word, the first truth revealing itself. In faith we honor God by submitting our noblest faculty, the intellect, to the authority of His evidence. When we are called upon to assent to a truth that is beyond the reach of the human intellect we need “the light of faith,” something that illuminates this higher truth so that it is not wholly obscure. Since reason is not enough, the light of faith, the infused grace of God, comes to our aid, and so illuminates the truth that we may believe as becomes rational beings who are the sons of God. The intellect assents to truth from evidence, or because the will moves it to assent; and in acts of faith the will is especially operative upon the intellect. The will urges the intellect to assent to the divine revelation because it is befitting and useful to so assent, because we shall obtain everlasting life as a reward for the assent, and so

¹ *Heb.* xi, 1.

² *Paradiso*, xxiv, 64.

on. As Saint Austin said, "Other things a man can do against his will, but to believe he must will."¹

Here again the grace of God comes in to strengthen the will to tend toward that spiritual good it should seek. The light of faith illuminates the understanding although the truth of faith remains obscure, since it is beyond the intellect's grasp (say, a belief in the Trinity); but supernatural grace moves the will, and as it now has a supernatural good placed before it, an everlasting reward, the will moves the intellect to assent. Thus faith bringeth into captivity every understanding unto the obedience of Christ.² Saint Thomas, then, defines faith³ as "The act of the intellect assenting to a divine truth owing to the movement of the will, which is itself moved by the grace of God."

Faith is a virtue, one of the three theological virtues, a supernatural habit by which we firmly believe those things to be true that God has revealed. A virtue ordinarily perfects a faculty, but the virtue of faith perfects two faculties—the intellect and the will. By the other virtuous habits man sees what accords with those habits, so by the virtue of faith the

¹ *De Veritate*, xiv., 1.

² *II Cor.* x, 5.

³ 2. 2. q. 4, a. 2.

mind is inclined to assent to those things that belong to the true faith, and not to other things.¹ The action of the will on the intellect is what makes faith a virtue, as strictly speaking all virtues are of the will. Faith as a purely intellectual habit is dry and barren, and soon wilts; it needs the will, love, charity. Saint Austin said, "What then is it to believe in God? It is to love Him by believing, to go to Him by believing."² This is living faith; this makes us love the truth, tend toward it without aversion. Christianity, Judaism, and almost all forms of paganism, hold that the soul attains its proper end by obedience of the intellect and the will to the Supreme Power; that is, by faith and good works. Protestantism that formerly denied the necessity of good works for salvation has abandoned that position in practice.

We may receive faith as a grace from God in infancy, by baptism; but when it comes in adult life the process is, first, that a reasonable investigation precede faith. This investigation in itself gives us a start. Reason can prove to us the existence of God, the origin and destiny of man, that God is our origin and end and our supreme Lord; and from these facts proceed the necessity of religion. If God has

¹ Saint Thomas, 2. 2. q. 4, ad 3.

² *De Civitate Dei*, xiv, 9.

revealed a religion, evidently the examiner must accept that. As God is truth itself there necessarily must be one set of truths that constitute this religion. Suppose, for the sake of argument, that God revealed that Christ is God: if the Jew and Mohammedan say Christ is not God, and the Christian say He is, one is in error and he has not the truth of God. Truth is one. The true religion must be one; it is a creed, a matter of faith; it must be holy, sanctifying, or it is useless; it must be for all the sons of God, catholic. Reason finds out what religion has these marks.

Again, reason knows that man sinned against God. Since God is infinite by His very definition, the offense was infinite, and no finite being, as man is, could satisfy for that offense, restore the old order of friendship, sonship, between God and man. Only God Himself could make amends to God.

Historically, for many centuries one of the Semitic nations along the eastern Mediterranean Basin kept free from the unreasonableness of idolatry, and faithful to God. Individuals among these Semites every now and then claimed that God revealed truths of religion to them: that He promised to send one Who would be competent to make amends for the sin of man, a redeemer, Who would be God

Himself. Historically we know positively that these Semites wrote down many centuries before what we call the Christian era a rounded biography of this redeemer not yet on earth, but to come. They foretold, as no human being could foretell without direct information, inspiration, from God, when the redeemer would be born as man. Micah, a contemporary of Isaiah who lived from about 790 to 700 B. C., prophesied he would be born in Bethlehem. Moses, who lived at the end of the thirteenth and the beginning of the twelfth century B. C. recorded¹ the first promise of the redeemer. Isaiah foretold² his birth from a virgin. David, born about 1085 B. C. (possibly 50 years later) told how the Messiah would be put to death;³ that His hands and feet would be pierced; that His garments would be divided among the executioners, and that they would cast lots for them; that he would be given gall and vinegar; that they would say to Him as He was dying: "He hoped in the Lord, let Him deliver Him." These and many other details were on record—Malachi even foretold the mission of John the Baptist. Then came a person, born in Bethlehem, called Jesus Christ, Who fulfilled every letter of the proph-

¹ *Genesis*, iii, 14; xii; xl ix.

² *VII*, 14.

³ *Psalm*, xxi.

ecies, Who claimed always to be God, Who confirmed His claim by great miracles, Who was seen by hundreds of witnesses as risen from the dead, Who by means of twelve ignorant fishermen established a Church that is young after 1900 years and the foundation of all modern civilization, and so on. This Jesus Christ, who proved Himself to be God, founded a religion on very definite lines: hence the fourth mark of the true religion—its uninterrupted historic connection with Christ, its apostolicity.

When reason has examined all these facts it has yet no divine faith; it doubts, it is fearful, it has led the examiner to the door of faith and left him there. When reason submits, humbly asks for light, God gives the grace of faith; in baptism, or where baptism has been received and faith lost, in the sacrament of penance.

We have here in faith the first step toward justification. After faith follows the fear of the Lord, which is the beginning of wisdom, the second step. The third step is from fear to hope; the fourth from hope to incipient charity (love of God); the fifth from incipient charity to contrition for sin with a purpose of amendment. Thus justification is effected, and the person has become ready to receive sancti-

fying grace, enters upon a state of habitual holiness and sonship of God. We are justified by the justice of Christ, Who merited for us the grace of justification; but we are formally justified, and made holy, by our own personal justice and holiness. This is the new life, the rebirth in God, the renovation of the spirit, the supernatural likeness to God, and like descriptions found in the scriptures, which imply a setting aside of sin and a permanent state of holiness.

Sanctifying grace is a gift of the Holy Ghost, not the Holy Ghost Himself; He is our holiness by the gift through which He makes us holy. This grace is a physical accident inherent in the soul; a permanent, supernatural quality of the soul; not precisely an operative habit, as a virtue is, but a disposition to perform meritorious acts; a fit soil, as it were, for the growth of spiritual seed. Many great theologians identify sanctifying grace with charity; others, among whom are Saint Thomas and Suarez, differentiate sanctifying grace and charity. It is a participation in the divine nature; not a deification, but a becoming like unto God, a spiritualizing that clears in us the idea of God and His spirit, as Suarez suggests.¹

The formal operations of sanctifying grace

¹ *De Gratia*, vii, 1, 30.

in the soul are sanctity, beauty, friendship and sonship of God. The infusion of grace effects the remission of sin and begins the state of holiness; it beautifies the soul by a reflection of God's beauty; it establishes a friendship of reciprocal benevolence; it raises us to a share in the paternal inheritance. The sonship is not a substantial issuance from the substance of God, as in the case of the Divine Word, but an analogical coming forth from God through adoption.

The "supernatural retinue" of sanctifying grace are the three theological virtues, faith, hope, and charity, and the supernatural moral virtues; some theologians think the seven gifts of the Holy Ghost also are concomitant to sanctifying grace, but this last is only an opinion. It raises the moral natural virtues to a supernatural plane. When the moral virtues are exercised by one not in a state of grace they profit nothing for the supernatural life.

The utmost advance of justification is the indwelling of the Holy Ghost. The fact is certain, but the mode of the indwelling is not known. Sanctifying grace is uncertain; that is, we are never sure that we possess it, and therefore we must always persevere at the working out of our salvation, and never presume. It is unequal in individuals; there is an

hierarchy of excellency even in saints. It is amissible through mortal sin, and when this happens grace must regrant it to us.

The moral virtues in a state of nature are acquirable through a repetition of good deeds. The moral virtues, however, in the justified Christian, as they tend toward a supernatural end, are infused. Faith begins the change toward perfection, which is furthered by hope, and completed by charity, and this charity is inseparable from sanctifying grace. These virtues, faith, hope and charity, first uplift the faculties of the soul, as sanctifying grace elevates the substance itself of the soul; secondly, as habits or virtues they inclined the soul toward acts concerning God as their supernatural end and proper object. Hence they are called theological virtues. Faith perfects the intellect, hope the will, and charity unites all with the supreme good.

These three basic virtues demand from man a conversion toward his proper ultimate end, which is God, and a consequent practice of the supernatural moral virtues as means toward that end. Thus the supernatural moral virtues are related to the theological virtues as the natural moral virtues are related to the principles of nature. The theological virtues in the justified man replace by a supernatural

participation the natural principle of action. A special divine impulse reduces them to act; and if the Holy Ghost is dwelling in the soul through charity and sanctifying grace, this impulse becomes an actual movement, together with which are infused the gifts of the Holy Ghost, or those habits that fit the faculties for the reception of that divine movement. These gifts are necessary that man promptly respond to the promptings of the Holy Ghost.

Temperance, then, as a supernatural virtue is infused entirely by God, not acquired; and it so supernaturally heals and elevates the concupiscent appetites and the will commanding them, that the will, incited by the Holy Ghost, is in no degree turned from good by the greatest sensible pleasures. That is very different from the somewhat shadowy natural temperance.

The gifts of the Holy Ghost are seven: wisdom, knowledge, understanding, and counsel, which pertain to the reason; and fortitude, piety (godliness), and fear, which perfect the free will. Wisdom detaches us from the world, and makes us love only the things of God; understanding lets us recognize the truths of religion; counsel is an effect of supernatural prudence, and helps us to see what is to God's glory and our own salvation; fortitude over-

comes obstacles in the practice of religion; knowledge shows us what to do and to avoid in attaining our last end; piety gives love, confidence, and zeal in God's service; fear inspires respect for God. As the gifts of the Holy Ghost, the theological, and the supernatural moral virtues are all above nature, they are energized by the Holy Ghost. That the moral supernatural virtues are infused with grace and differ in species from the natural moral virtues is an opinion so very probable that the contrary opinion is rash.

By the repeated exercise of acts of the supernatural moral virtues we strengthen the supernatural virtues as far as a receptivity of these infused virtues and merit are concerned, but God Himself alone gives the increase in this supernatural order. Any exercise of supernatural virtue strengthens also the natural parallel virtue, and this natural virtue may endure even after the supernatural virtue has been destroyed by sin. If we lose charity and sanctifying grace we are thrown back to a state of nature, and the natural virtue may remain. Considerable faith in God also can remain despite the loss of charity and sanctifying grace. The supernatural virtues, then, are supernatural habits infused by God Himself into the just man, for the performing of supernatural

and meritorious acts connected with the means for acquiring our supernatural end. The theological virtues turn us toward our supernatural end, and rightly dispose us as regard acts concerned with that end; the supernatural virtues thus dispose us as regards means to that end, and all this supposes an impulse from the Holy Ghost, which we obey through the help we get from the gifts of the same Holy Spirit.

There is a triple division of happiness: that of the voluptuous life, that of the active life, and that of a contemplative life. Voluptuous happiness is contrary to reason; it evidently centers all in means instead of ends. Active happiness merely disposes life for future happiness. Contemplative happiness is essentially the happiness of the future life. The Beatitudes, which our Lord enumerated in the Sermon on the Mount¹ are means to keep us from seeking the false happiness of pleasure. A voluptuous life may consist in an affluence of exterior goods, as riches or honors; and from these man is restrained by virtue so that he uses them moderately; by the gifts of the Holy Ghost he is so far withdrawn from them that he despises them. Hence the first beatitude: “Blessed are the poor in spirit, for theirs is the kingdom of heaven.” Again, a voluptuous

¹ *Matthew*, v.

life may consist in following our concupiscent or irascible appetites. Virtue keeps us from yielding to the irascible passions beyond what is reasonable; the gifts of the Holy Ghost totally represses them: hence "Blessed are the meek, for they shall possess the land." The concupiscent passions are kept within reason by virtue, the gifts of the Holy Ghost enable us to so far reject them that we are willing to suffer mortification for the sake of the nobler life: hence, "Blessed are they that mourn, for they shall be comforted."

Thus far the life of false voluptuous happiness. As regards the happiness of the active life, this life consists chiefly in what we do for our neighbor either through justice or as a benefit. Virtue keeps us to justice in this life; the gifts of the Holy Ghost intensify our life unto a hunger and thirst for justice—"Blessed are they that hunger and thirst for justice for they shall be filled." When there is question of benefiting our neighbor virtue would have us give rationally to friends and kin; the gifts of the Holy Ghost make us give gratuitously to all as God gives—"Blessed are the merciful, for they shall obtain mercy."

The contemplative life is kept in view in the remaining beatitudes. Final happiness, or a beginning thereof, is in the contemplative life

as a reward, an effect of the active life which disposes man for the contemplative life. That effect of the active life, both through virtue and the gifts of the Holy Ghost, is cleanness of heart, which keeps the mind of man unpolluted by passion—"Blessed are the clean of heart, for they shall see God." As regards our relation with our neighbor the virtues and gifts of the active life perfect a man through peace, *opus justitiae pax*,—"Blessed are the peace-makers, for they shall be called the children of God."¹

Another group to be noticed are the twelve fruits of the Spirit. Saint Paul said,² "The works of the flesh are manifest: which are fornication, uncleanness, immorality, luxury, idolatry, witchcraft, enmities, contention, wrath, quarrels, dissensions, sects, envy, murders, drunkenness, revellings and such like: of the which I foretell you as I have foretold to you, that they who do such things shall not obtain the kingdom of God. But the fruit of the Spirit is, charity, joy, peace, patience, benignity, goodness, longanimity, mildness, faith, modesty, continency, chastity. Against such there is no law. And they who are Christ's have crucified their flesh, with the vices and concupiscences."

¹ Cf. Saint Thomas, 1. 2. q. 69, a. 3.

² *Galatians*, v.

Saint John in the Apocalypse¹ speaks also of these fruits: "And he showed me a river of water of life, clear as crystal, preceding from the throne of God, and of the Lamb. In the midst of the street thereof, and on both sides of the river, was the tree of life, bearing *twelve fruits*, yielding it fruit every month, and the leaves of the tree for the healing of the nations."

The process of the Holy Spirit in our sanctification is that man's mind be ordered first as regards itself; secondly as regards those things about it; thirdly, as regards those things below it. The mind is well disposed in itself when it is correctly poised as regards good and evil. The first disposing force of the mind is love, the origin of all the affections. Hence the first fruit of the spirit is *Charity*, in which especially the Holy Ghost is given to us as in His similitude, since He is the Divine Love.

From this love which is charity flows *Joy*. Every lover rejoices in union with the beloved, and charity always has present the God it loves. "He that abideth in charity, abideth in God, and God in him."²

Perfect joy gives *peace*: first as regards disturbance from without. Full joy is impossible where fruition of good is disturbed by others,

¹ xxii.

² *I John*, iv, 16.

but he that has his heart at full peace in one object can not be disturbed by another, since he becomes oblivious of all others. Again, to have peace we should not only be above perturbation from without, but from within: that is, desire should be sated in one object. Thus peace comes out of charity and joy.

In adversity, evil, the mind can be at ease from two aspects: first, it should not be disturbed by present evil,—that is *Patience*; secondly, it is to be undisturbed by deferred good,—that is *Longanimity*.

The lack of good infers evil. Toward the good as regards our neighbor the mind may be disposed to act favorably,—that is *Goodness*; secondly it may be modified as regards the manner of doing the good,—that is *Benignity*. Saint Thomas says: “Dicuntur benigniori quos bonus ignis amoris fervere facit ad benefaciendum proximis.”¹ He plays on the word: They are called benign whom the good fire of love enkindles to benefit the brethren. Thirdly, the mind may serenely bear evil inflicted by others,—that is *Meekness* or *Mildness*, which checks anger. If we do not injure our neighbor by refraining from fraud or deceit we have *Faith* in the sense of *Fidelity*. If faith here is taken as belief in God, through it

¹ l. 2., q. 70, a. 3.

man is so ordained to what is above him that he subjects the intellect to God, and consequently all that is his; and he is so ordained toward what is below him that (a) he observes the golden mean in all his word and deeds—that is *Modesty*; (b) he controls his concupiscentias by *Continence* and *Chastity*. Continence restrains man from what is licit, chastity from what is illicit in the sexual life.

The means Christ left us whereby we are to obtain sanctifying grace are the sacraments. A sacrament is “A symbol of something sacred, and a visible form of invisible grace, having the power of sanctifying.”¹ Man is led by corporeal and sensible things to the spiritual and intelligible; and God chose to use certain corporeal and sensible signs, sacraments, to confer sanctifying grace, and also as conditions to the obtaining of this grace. The sacraments, *ex opere operato*, by virtue of the action itself, give grace; that is, God uses the sensible action as an instrument in conferring grace. The Thomists hold that the sacraments are physical causes, like a harp’s strings touched to harmony by the fingers of a musician; another group of theologians make them moral causes; but all agree that they confer grace by virtue of the action itself, when the conditions

¹ *Council of Trent*, Sess. xiii, c. 3.

for valid and licit reception of the sacraments are present.

The sacraments that may bear upon intemperance directly are baptism, penance, confirmation, and the Holy Eucharist. Baptism is a necessary condition for the reception of sanctifying grace before this grace has ever been granted; and penance is a necessary condition to restore it after it has been lost by mortal sin. These two are the sacraments of the dead.

Leibniz, who was not a Catholic, the foremost German philosopher of the eighteenth century, said¹ "This whole work of sacramental penance is indeed worthy of the Divine wisdom, and if aught else in the Christian dispensation is meritorious of praise, surely this wondrous institution. For the necessity of confessing one's sins deters a man from committing them, and hope is given again to him that may have fallen after expiation. The pious and prudent confessor is in very deed a great instrument in the hands of God for man's regeneration: for the kindly advice of God's priest helps man to control his passions, to know the lurking places of sin, to avoid the occasions of evil doing, to restore ill gotten goods, to have hope after depression and doubt, to have peace after affliction; in a word, to re-

¹ *Systema Theologicum*, p. 270, Paris, 1819.

move or at least lessen all evil; and if there is no pleasure on earth like a faithful friend, what must be the esteem a man must have for him who is in truth a friend in the hour of his direst need?"

There are legions of persons, once Christian and capable of the supernatural life given them in baptism through the merits of Christ, who have become drunkards; and in the reformation of these in sobriety the use of supernatural medicines is the only scientific treatment. Such a drunkard after the first medical treatment must go to confession, and begin the use of the supernatural means described above. Then he is to start at once at *daily* communion. The remainder of the process is an application of what has been said already concerning the moral treatment of alcoholism in the natural man by natural means. He purifies the intention in the use of these natural means and thereby raises them to a supernatural plane. The natural virtues which in the natural man are acquired by painful effort and after repeated failure, are simply infused, handed over ready made, as supernatural virtues, to the Christian in the state of sanctifying grace. *Salva reverentia*, they are poured into his soul just as artificially made antitoxin is now injected into a diphtheria patient, and they get

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him on his feet in a few days, instead of risking his moral life by letting him build up his own antitoxin naturally, perhaps to fail in the effort. The divine law now is to use this spiritual antitoxin, as the civil law is to use the diphtheria antitoxin—we are not licensed to take foolish risks, or to resort to spiritual quackery. Weekly communion will not do. "Give us this day our *daily* bread." You can not do much toward restoring strength to a starved man by an occasional Sunday dinner. The patient must arrange with a priest in his own neighborhood so that he may be able to go to confession in the sacristy any morning before mass, and so leave no excuse for putting off communion. After a short time these morning confessions will not be necessary. He should give over the evil habit of going across the city to go to confession.

All this is, of course, unintelligible to those that are not Catholics, but the drunkard that has been a Catholic has enough faith left to understand what is meant. A confirmed drunkard is not a Catholic, of course, except in the state census. The method described here is as absolutely scientific as a medical process as is the staining of the tubercle bacillus to clear up a diagnosis of phthisis. This method is so scientific that as a physician I should advise a

drunkard who is not a Catholic, but who is serious in his desire to reform, to become a Catholic, to make sure of the cure. This motive would require considerable purification before it would pass the examiners, but the procedure in itself is reasonable. There are no statistics to show that drunkards who are called Catholics in the census are more likely to reform than other folk, and there is no reason why they should, because, as I said, there is no such thing as a Catholic drunkard—drunkards belong to no church except to the extent that some of them pay pew-rent, and paying pew-rent alone will not save many souls.

It is somewhat difficult to persuade a drunkard, who has been a Catholic, to take up this spiritual method of cure. His heart is numb, and he is inclined to despair. “Not that! I am not fit for daily communion!”—Bosh! Nobody is; but God lets us go to the rail, and that is His affair. There was the man Flavius Augustin, a rounder, a Manichean, a begetter of bastards, who became one of the greatest Doctors of the Church; there was Saul of Tarsus, the police-informer, the murderer of saints, who became Saint Paul, the Apostle of the Gentiles, one of the most effective instruments of salvation that God ever used; there was Simon Bar-Jonah, who denied Christ in

His need at the jibe of a kitchen-wench, who became Saint Peter, the chief of the Apostles; there was the woman Mary of Magdala, as common as the street she walked, to whom the risen Savior appeared first in the Easter garden; there was David, the adulterer, who murdered a loyal soldier to further his own lechery, but who became afterward a marvelous prophet after God's own heart; there was the woman Eve, who flooded Hell with undying souls, but who is now at the feet of the Queen of Angels. What is an ordinary drunkard to those redeemed brutes? Why, Christ has a mother's heart for a black sheep. He came on earth, and in death gasped: "I thirst!" on a gibbet just to slake with the precious blood the foul yearnings of such drunkards as may read these words. There is good reason for the sin of presumption, but the sin of despair is the sin of a whining imbecile. Christ is the glory of gentlemen, not a police-magistrate—give Him a chance! You say you are not worthy to go to the table of the sons of God, but He says, "Go out quickly into the streets and lanes of the city, and bring in hither the poor, and the feeble, and the blind, and the lame. Go out into the highways and hedges, and *compel* them to come in, that my house be filled."

"He that eateth my flesh and drinketh my

blood, abideth in Me and I in him," and with Him within the soul of the man striving to rise from drunkenness there is no question of the outcome; the case is ended. Do you think that He will trick you, play you false? Do you think He can not save you from even yourself if you ask Him to do so? *In te, Domine, speravi; non confundar in aeternum!* You must meet Him on the way; not half-way; just start toward Him: that is all He asks. He will not always drive you into Heaven, but He will wait at the door for you if you will only come home. The most terrible fact in the world is our free will, to save us or to lose; we go away from God through it, and we must return by the same road.

The drunkard is a sensualist, and to him Christ said, "If any man will come after me, let him deny himself, and take up his cross daily, and follow Me."¹ The drunkard, like any one that would be close to God, must mortify, that is, check, restrain, his lower appetites. Saint Jerome said, "He denies himself and takes up his cross, who from having been unchaste, becomes chaste, from having been irregular becomes regular, from having been weak and fearful, becomes strong and courageous," and surely also who from having

¹ Luke, ix, 23.

been drunken becomes sober. "And they who are Christ's have crucified their flesh, with the vices and concupiscentes"; conquered their tendencies toward indulging the lower appetites.

The most practical preliminary training for this conquest is to deny the body its luxuries in little things, so that when the fright of the great temptation arises the body will be held firm by bit and spur. This is not hatred of the body, but hatred of the vices of the body. The drunkard working out of the wallow, should be patient, gentle, courteous; he should take the world good-naturedly; be satisfied with his food, lodging, service; aim at tranquillity in all things;—opportunities for ascesis will suggest themselves to his common sense only too clearly almost every hour of the day. After a very little while he will begin to wonder why he used to make so much fuss over trifles. If there are children in the house, a good test of advance is this that the patient never under any provocation so much as hardens his voice in dealing with a child.

Perseverance is the only real proof of reformation. That a man has remained sober for two years means really nothing much. Only after the fourth year should he begin to trust

that the reformation is permanent; but even then, in many types of drunkards, a single glass of whiskey can upset the whole edifice built in bloody sweat. A supreme law for the man who has once been a drunkard is this that he must never, for the remainder of his life, under any possible provocation, drink even a teaspoonful of alcohol. If he doubts the necessity of this law, let him abstain in reparation to God for the old sin, and not play with fire. Dr. C. A. McBride¹ tells of a reformed drunkard that had not touched alcohol for five years and was convinced that he had outgrown all tendency toward it. He was obliged once in his business to enter some wine-vaults, and after five minutes the fumes of the alcohol awoke so powerful a craving that he was obliged to go home and lock himself up for three days to overcome it.

¹ *The Modern Treatment of Alcoholism and Drug Narcotism*, p. 108.

APPENDIX

ADDICTION TO OPIUM, MORPHINE, COCAINE, AND ETHER

Beside alcohol there are many drugs that, through acute or chronic poisoning from their use, cause corporeal and mental disturbance, and induce addictions as depressing morally as that brought on by alcohol. Opium, cocaine, and some derivatives of opium, especially morphine, are the drugs of this kind most commonly used in America and Europe. Intoxication by chloral is also not seldom met. Cannabis Indica, or Indian hemp, is a common Asiatic intoxicant, and Marihuano (*astragalus hornu*) or the loco weed, is a Mexican plant of the hemp family, which in its effects resembles Cannabis Indica. The Arabian preparation of Cannabis Indica is called *Hasheesh* or *Hashish*, *Bang*, or *Siddhi*; it is made up as a confection, or it is mixed with tobacco and smoked, and it is found in other forms. *Gunjah* is the dried plant as sold in India for smoking; *Churrus* is a resinous exudate from the leaves. The plant from which the drug is obtained is the Canna-

bis Sativa, and it is now grown in the United States. In large doses it causes drunkenness, with a sense of great prolongation of time: a minute may seem to be days. There may be a condition of apparent double consciousness, as if the user were two persons. It can cause convulsions, and catalepsy, and sometimes a maniacal insanity from which the patient usually recovers in from some days to a few months. Its continued use brings on mental weakness, dullness, vertigo, headache, and impotence from overstimulation of the sexual organs. No case of fatal poisoning by Cannabis Indica has been reported. H. C. Wood¹ gives a full account of the effects of a single large dose of Cannabis Americana taken by himself.

Opium is the exudate from the unripe capsules of the White Poppy (*Papaver Somniferum*). It comes chiefly from Asia Minor to the United States. About twenty alkaloids, two organic acids, and several other less important substances are found in opium. The most important alkaloids are morphine, from which the emetic apomorphine is derived, and codeine. There are twenty-one official and ten unofficial preparations of opium and morphine, and several derivatives from morphine and co-

¹ *Therapeutics*, Eleventh Edition, p. 163.

deine. Laudanum is a tincture of opium; paregoric is a camphorated tincture of opium; McMunn's elixir and papine are tinctures of deodorized opium; Dover's powder has one grain of opium in every ten grains of the powder; Dalby's carminative has one-sixth of a grain of opium to the ounce; Godfrey's cordial, one-half grain to the ounce; chlorodyne contains morphine in varying quantities according to the formula (J. Collis Browne's has six grains to the ounce); and Mrs. Winslow's soothing sirup contains one-eighth of a grain of opium to each fluid ounce. This last preparation is especially dangerous, as it is used for children, and all children under ten years of age bear opium very badly. Heroin is used in cough mixtures; dionin is another common derivative of morphine. Much of the codeine sold in the shops is largely morphine. The ordinary Brown Mixture, or compound mixture of liquorice (*mistura glycrrhizae composita*), which is used everywhere as an expectorant in "colds," contains twelve per cent. of the camphorated tincture of opium. It acts like Dover's powder, and it should not be given to children. Of course all the preparations should be avoided by any one who has a tendency to opium or morphine addiction. Not seldom the cause of addiction to the use of opium or morphine begins

through taking unwittingly preparations containing these drugs.

Opium as a medicine was used long before the Christian era, but morphine was first described by Setürner, a German apothecary, in 1817. Morphinism as a habit was mentioned in Germany by Nusbaum in 1864, and addiction to the use of codeine, and heroin, are noticeable in recent years. Chlorodyne, black drop (*acetum opii*), and nepenthe (morphine meconate in sherry wine) are other forms of opium used by the habitual consumers. At present the vicious use of opium and its derivatives is about fifty times that of its medicinal use.

The smoking of opium is not modern in origin; it was prevalent in India in 1511. In 1773 the East India Company began to send opium from India into China; and since 1793 opium is a governmental monopoly. In 1796 the Chinese government forbade the importation of opium, but by bribing the Chinese officials the importation of opium into China was trebled between 1816 and 1836. In March, 1839 the Chinese government destroyed the opium in the country, whereupon England declared war upon China and made the Chinese pay indemnity for the opium destroyed. Since then England forced the trade on the Chinese. Re-

cently the annual Indian revenue from the Chinese opium trade was about \$45,000,000. Close to one per cent. of the Chinese population smokes opium as a result of this trade, and the habit is spreading rapidly. One per cent. of the population of China is near 4,898,000 persons.

Opium smoking began in the United States in 1868 in San Francisco, through Chinese example, and the vice is now common in all the large cities of this country. In May, 1912, the California State Board of Pharmacy burned \$20,000 worth of opium, morphine, *yen shee*, opium pipes, and other instruments used in taking these drugs. This raid sent more than 200 men to prison, and brought in \$85,000 in fines. The Superintendent of the Philadelphia Police, on July 11, 1912, said that, according to the United States official reports, 48 per cent. of the criminals in this country habitually use opium, morphine, cocaine, and the like drugs; that about 150,000 Americans and 120,000 Chinese in the United States smoke opium; and that the police of Philadelphia found many school children under fifteen years of age habituated to the use of cocaine and morphine, which was obtained from druggists and street-peddlers. These children become thieves and gamblers to get money with which to buy the drugs.

Opium smoking is, of course, a deliberately acquired vice; it can not become a habit by inadvertence as sometimes happens in morphinism. It requires more time to form the opium habit by smoking than if the drug is taken as morphine or laudanum; and smoking is apparently not so pernicious in its effects, physically and morally, as other forms of opium addiction.

The ordinary medicinal dose for an adult is one grain of opium, one-eighth of a grain of morphine, one half-ounce of paregoric, and twenty drops of laudanum. The daily dose used by groups among 1,000 Chinese opium smokers tabulated by Kane¹ was: 646 varied between 16 and 128 grains; 250 from 160 to 320 grains; 104 from 480 to 1,600 grains. When opium is first smoked and inhaled the pulse is increased and next lessened in rate; there is a fall in temperature, some vertigo and slight nausea, staggering, sweating, ringing in the ears, and intense itching over the entire body. Then there may be vomiting, uncertainty in walking, drowsiness, contracted pupils, dryness in the throat, and sexual excitement. The nausea and itching may last for about twenty-four hours. Some beginners are talkative, and although drowsy they fear to go asleep.

¹ Osler's *Modern Medicine*, vol. i., p. 206.

Others again sleep heavily for hours. Frequently for about twenty-four hours after smoking the beginner is languid, without appetite for food, has an intense headache, and the itching continues.

Those accustomed to the smoking require many pipefuls and several hours' time before the excitation comes, and the majority of these are troubled by a distressing insomnia. If much of the drug is smoked sleep filled with terrifying hallucinations, or a condition of very painful wakefulness may follow. The stupid, sleepy, condition of the next day is relieved by further smoking. Habitual smokers say that if they use ordinary quantities of the drug they do not have headache as a consequent symptom.

The effects of opium smoking are first on the mind. The feeling of exhilaration gradually becomes more difficult to obtain, and after a use, continued from about three months to a year it ceases to occur no matter how much of the drug is used. In this stage if the smoker attempts to stop the use of opium his distress becomes so severe he can not abstain. Then there is a marked disinclination for mental effort, a general weakening of the will and memory, and a lack of decision in judgment.

After smoking, this indecision even in the most trifling actions is very apparent, and there is much irritability.

The mental stupidity turns frequently into violent outbursts of rage, and there is deep anxiety, dread of impending evil, which is relieved by renewed smoking. Suicide, especially among female opium smokers, is somewhat common in this stage. There is not so much neuralgia and similar pain after smoking as after using opium in other forms. Tremor of the hands and tongue is seen in heavy smokers. The pupils, which are contracted after the smoking, later dilate, and the eyes commonly inflame. All that smoke for any length of time lose more or less vision. The habitual smoker is sallow and ghastly in facial appearance; he has chronic bronchitis and catarrh with cough, and his voice fails. He gets gastritis, constipation, consequent piles, and an obstinate itching. Sometimes there is a marked diarrhoea, which may persist for months.

In old cases the vomiting may be severe. The itching in some patients is intense, and these persons tear the skin, especially in the genital region. There is sexual excitement for about the first six months, especially in women,

and then a subsidence, which in men goes on into impotence. The women smokers suffer from arrested menstruation, and many miscarry. The children of an opium-smoker may be healthy, which is contrary to the effect usual when the drug is used in other forms, although once in a while a morphinist bears a healthy child.

It is relatively easier to cure the smoker than the person that takes the drug as morphine, laudanum, or the like. When the smoking is stopped the first signs of the withdrawal are yawning, sneezing, profuse discharge of tears and mucus from the eyes and nose, irregularity of the pupils, and ringing in the ears. Then there is extreme restlessness, intense pain in the joints, nausea, vomiting, and purging; the nausea and vomiting may be almost constant. A dull ache in the throat is noticed, and this is followed by violent pains in the muscles of the calves and between the shoulders. Chills and flashes of heat run along the spine, and these are followed by sweating. In some cases, if no opiate is used, the vomiting and diarrhoea continue until collapse and death result: with proper treatment the distressing symptoms cease.

Sleeplessness continues for a long time after the smoking has been stopped, and the bron-

chitis and catarrh may last for months. The pains in the legs and between the shouders gradually decrease, and a general convalescence follows. After this cure a single indulgence in smoking may renew the addiction, br' there are a few exceptions to this rule. Dr butt, a leading English physician mal^r of opium¹ smoking in the Chinese

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does. Many opium drinkers go on for a year or more without showing serious change, which is not possible in morphinism.

As the habit is formed there is a change in the patient's character: he becomes irritable, peevish, sleepy, and he begins to show deceit in small matters especially in connection with procuring his opium. His face may grow sal-

and parchment-like; or the skin-eruptions in the earlier stage may persist. The hair is gray, and the carriage is like that of an, worn out or cachetic. The walk, and in many cases tremu-

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what resembling angina pectoris, and the general nutrition is low. If he is attacked by erysipelas, pneumonia, or other infectious disease, he dies. He may become insane: fall into melancholia or dementia.

The use of morphine at present is replacing opium-drinking, and the ordinary method of taking the drug is hypodermically. Any drug introduced into the circulation almost directly by the hypodermic syringe is much more active than one administered through the stomach and intestinal canal, and this is one reason why morphinism is the most difficult form of opium intoxication to cure. If a tabloid of morphine is placed under the tongue it is absorbed almost as completely as if given hypodermically. Physicians are oftenest morphinists because of their familiarity with the hypodermic syringe and the drug. Rodet of Paris in 650 cases of morphinism found that 40 per cent. of the patients were physicians.

At the beginning of morphinism the drug is used to get a feeling of exaltation, strength, relief from pain or grief. The duration of this exaltation at first may be for twenty-four hours, but that period is soon reduced to a few minutes, and presently it is not possible to bring it about. The drug then must be used to quiet the intense craving and the pain that

comes with abstinence from it. Some persons reach the stage of craving very rapidly.

In this second or toxic stage there is dryness of the mouth, nausea, loss of appetite for food. The voice grows hoarse. Dyspepsia and obstinate constipation follow; sexual desire is depressed, and women suffer from menstrual disorders. The memory begins to fail, and the patient can not sleep. He spends the night reading although he is exhausted, and when sleep does come it is disturbed. He is peevish, irritable, stupid; he grows self-centered, and the will is very weak. The night becomes more and more dreaded, and soon sleep is constantly broken by frightful nightmares. The hair falls out, the teeth decay, the patient grows lean and ghastly, his eyes are dull, his breath is foul. At this stage he still can regain health if treated properly, but if he is not cured at this point, he sinks into a hopeless condition. The cachexia progresses, the body wastes away, secretions are almost suppressed, his legs swell, and the slightest exertion causes great oppression. He is stuporous, or he may be in continual delirium. If you cut off his morphine then he will die, and if you do not cut it off he will die.

The memory is especially affected in morphinism, and the amnesia somewhat resembles

that of senile dementia, or alcoholic amnesia. Names of persons and streets are forgotten early. Like an alcoholic amnesia this forgetfulness in the morphinist is for recent events. He may remember what happened in childhood, but not be able to recall what happened a few hours ago. If he is a physician he will forget the doses of drugs, and the meaning of ordinary scientific terms. Artisans and clerks forget the methods of their work and lose their positions on this account. In advanced stages nearly all memory disappears.

The reason remains clear for some time, but the will soon becomes inoperative: patients will remain in bed because they have not will-power enough left to get up. They have no regard for duty or responsibility. They are discontented with everything, quarrelsome, have outbursts of violent rage, and grow destructive and dangerous. They resent criticism of their condition and advice. Users of morphine will not tell the truth relative to their vice; no experienced physician will believe any morphinist on oath when the patient is talking of his vice. When the craving for the drug is present they will stop at nothing, except really courageous actions, to get the morphine: they will lie, steal, beg on the street, and women will prostitute themselves.

They can not sleep at night, but in the daytime they may fall asleep whenever they sit down. Sometimes it is impossible to converse with them on this account, they will doze in the middle of a sentence. I have seen a salesman who is a morphinist fall asleep while his hand was extended handing a sample to a customer. The hallucinations are as a rule nocturnal. At night they see spectres of animals, or vague ghosts. Hallucinations of sight are the commonest, but there are auditory hallucinations, and rarely taste and smell are thus affected. The sense of taste is often found dulled. Hearing and sight may become so bad as to make walking dangerous and reading or writing impossible. Light is painful to the eyes of these patients, but the retina is not inflamed; the eye-ground may be anaemic with reduced arteries and engorged veins. Recovery of sight is usual if the morphine injection is discontinued. The sense of touch is dulled in most cases, but there may be soreness and neuralgia; the soles may be so painful as to make walking very difficult. The confirmed morphinist rarely commits suicide because he has not will power enough left to do so.

The nausea, vomit, and anorexia are especially troublesome in the early stages. Some patients have extreme thirst. The breath has

a peculiar foul odor. There may be constipation or diarrhoea with bloody stools. The teeth rapidly decay without pain, and the hair falls out. The body is so poorly nourished that a slight blow causes great black and blue spots, and abscesses form easily. These abscesses may start at the place where the hypodermic needle has pierced the skin or at a distance. They commonly heal under treatment, but they may be indolent, and erysipelas or cellulitis may begin in them. Sometimes tetanus has been injected by dirty needles. Direct accidental injection of the morphine into the lumen of a vein has killed morphinists.

The pulse is slow and the heart is feeble. Respiration is lowered, and there is air-hunger on slight exertion. The effects on the genito-urinary organs is like that of opium. Most women that use morphine are sterile, but not all. Children of such mothers may be healthy, but this is exceptional. Erlenmeyer once saw a healthy child born to a mother and father who were both inveterate morphinists. Many of these children have defective hearts, and are born with the morphine habit. Nothing but morphine will quiet such infants, and if they do not get the drug they are likely to collapse and die. Sometimes it is possible to raise such children and to gradually cure them of the

opium craving. Often the children of morphinists are idiots or imbeciles. Some of these children in adult life show a tendency to morphinism or alcoholism.

Morphinists in the earlier stages are full of plausible excuses and very disorderly. They are full of schemes for the benefit of society, but nothing ever happens. If you ask them concerning the use of morphine they will assure you that if any one needs the support of stimulating drugs they do because of their extraordinary labors (which end in talk), but they would never yield to such a temptation. Their pupils are contracted by the morphine while they are lying to you. They are always late for engagements. A woman may appear, dressed elaborately, three hours late for a dinner, with voluble excuses blaming every one for her tardiness except herself and the morphine. Rarely a woman will acknowledge to a physician that "owing to her indescribable sufferings" she does use a tiny bit of morphine, but such admissions are seldom heard. If you prove a morphinist a liar, he or she will laughingly find a plausible excuse for the deceit.

When morphine is withdrawn the most important symptom is collapse, and if this withdrawal is sudden and complete the collapse may cause death. When the effects of the last in-

jection have passed there is restlessness, yawning, and sneezing. The eyes begin to water and to grow dull; the lids droop; vision and hearing are disturbed. The knee-jerks which were deficient are exaggerated; anæsthesia changes to hyperæsthesia; the patient paces about in agony; he has feverless chills (chills in malaria always are symptomatic of a rapidly rising fever) or fever, he sweats, drivels, grows deathly pale, vomits, hiccups; his pupils dilate and are sluggish in accommodation, speech and gait are palsied; he has hallucinations of sight, especially if he is also an alcoholic; there may be hallucination of hearing, and sometimes of smell; he may commit suicide in this stage. If he is not watched constantly by a physician who stays in the room, he may drop dead. The fatal collapse may take place without warning, in an interval of quiet while the patient is talking rationally. In certain cases the face may flush suddenly, the pulse drop to about forty, and after a moment of intense agony the patient will fall into unconsciousness for about a quarter of an hour. These fainting fits may recur three or four times in the twenty-four hours, and may end in convalescence or in sudden death. A few cases are recorded of sudden death whilst the morphinist was apparently convalescing.

Some patients show hysterical, epileptoid, or choreic conditions; others a maniacal state with shrieking, suicidal or homicidal tendencies. Persons that have taken morphine because of some chronic pain usually have a recurrence of the old difficulty when the morphinism is removed. Exceptional cases in final stages of withdrawal do not show these extreme mental disturbances, but they grow so weak they must lie abed. They have marked diarrhoea, and sometimes the pain and oversensitiveness of the skin is such that even a sheet hurts the skin unbearably.

In the treatment of morphinism it is practically impossible to do anything toward removal of the vice before the poison is removed by physical means. In this treatment it was formerly the custom with some physicians suddenly to withdraw all morphine, but this method is no longer observed except in cases where the daily dose has not been large. If a patient has been taking less than five grains daily, and is in fair physical condition, sudden withdrawal may be tried, but a gradual withdrawal is the rule with other cases.

It is very difficult to keep morphine from patients that come to a hospital with the express intention of being cured, especially if they are persons that have gone through the treatment

before. Women conceal morphine in their hair, in the lining of coats; it is hidden in the barrels of fountain pens; in nooks on the hospital grounds; and McBride tells of one of his patients who sprayed a concentrated solution of morphine on the wall of his room, and when he felt a desire for the drug he scraped it from the wall.

Dr. Ernest S. Bishop of New York described¹ the Lambert method of treating morphinism medically, which is a modification or application of the Lambert method of treating alcoholism described above in Chapter V. After the addiction is established there is a certain quantity of morphine necessary daily to keep the body in a condition where the symptoms of withdrawal are not provoked. If the patient uses only this quantity he may go on for some time without evidence of grave symptoms of physical degeneration. Nearly all morphinists, however, use the drug far in excess of this pseudophysiological quantity. The first step in the treatment is to find out for a given patient what this dose is, how much morphine he requires to keep him at his best, just beyond the manifestation of withdrawal symptoms. The drug is cut down in quantity till withdrawal symptoms begin to occur—

¹*Journal of the American Medical Association*, 68:20, May 18, 1912.

the restlessness, yawning, craving, as described above: thus just the quantity necessary to begin with in the subsequent treatment is learned. The belladonna mixture and the catharsis are used as in treating alcoholism, and starting with about two-thirds of the pseudophysiologic dose of morphine this is gradually cut down to nothing. Bishop says a grain of morphine every four hours is an average dose at the beginning, and some patients require less.

Lambert himself uses the belladonna mixture, containing two parts of a 15 per cent. tincture of belladonna to one part each of the fluid-extract of hyoscyamus and xanthoxylon. The morphinist receives five compound cathartic pills and five grains of blue mass, and six hours later, if these have not acted, a saline purgative is added. Two-thirds of the daily pseudophysiological dose of morphine for this particular patient is divided into three parts, and one of the parts is given after the patient's bowels have moved freely for three or four stools; then in another half-hour the second part of the morphine, then in another half-hour the third part. When the first dose of morphine is given the belladonna mixture is administered in six drop doses, not minims. This dose of the belladonna is repeated every hour, and at

the end of every sixth hour the dose of belladonna is increased by two drops until the patient is taking sixteen drops at a dose, which is the average maximum dose. This dosage is kept up, and is reduced or discontinued for a while only when signs of belladonna saturation appear, such as dilatation of the pupils, flushing, very dry throat, sharp voice, harping on one subject of speech.

At the tenth hour after the first dose of morphine has been given, again five compound cathartic pills and five grains of blue mass are used. These should act in six or eight hours, and if they do not, a saline purge is added. When they have acted the second dose of morphine is given, usually about the eighteenth hour. This is a single dose, and it is one-half the original dose, that is, one-third the daily pseudophysiological quantity. The belladonna mixture is still continued.

Ten hours after the second dose of morphine, that is, about the twenty-eighth hour, the five compound cathartic pills and the five grains of blue mass are given again, with a saline purge if necessary seven or eight hours later. If the pills do not act the "B. B." pills are to be used as described in Chapter V. above.

After the purge has acted again, about the

thirty-sixth hour, a third dose of morphine is given, which is one-half the last dose, or one-sixth the first dose. This is usually the last dose of morphine required.

Ten hours after this third dose of morphine the cathartic pills and the blue mass are again used, followed by the saline, seven or eight hours later, if needed, and then clay-colored biliary stools begin to appear. As these appear two ounces of castor oil are used to clear out the bowel.

During this third interval the patient may begin to grow nervous and restless: he is to be controlled by valerianates, or it may be necessary to use codeine, which is itself an opium derivative. Here the patient may feign withdrawal symptoms and this may have to be taken into account. It is well not to describe these symptoms to nurses or resident physicians in the presence of the patient. After the craving has ceased Lambert uses tonics containing phosphorus and arsenic.

Some patients stand the catharsis worse than the alcoholics do, and judgment must be used not to push it too hard. Bishop says he finds half-grain doses of calomel, every two, three, or four hours, useful to check vomiting and abdominal pain.

If the symptoms of withdrawal of morphine

begin to show during the treatment, the dosage of morphine is slightly increased to check these. A sick feeling, a desire to go to bed, do not necessarily mean that morphine is needed, and it is not to be given unless there is an evident craving: sharp catharsis, rather, is to be substituted.

The diet apparently is not so important as it is in alcoholic elimination, and it should be used with a regard to the stomach condition. Koumyss and eggs are recommended by Lambert.

During convalescence indiscretion in diet will cause trouble. Vomiting may be brought on:

1. By food or repeated administration of medicines;
2. by mucous gastritis, due to asthenia or the belladonna, and this can be controlled by stopping the use of the belladonna for a few hours;
3. by need for morphine, which is shown by withdrawal symptoms, and is relieved by morphine;
4. by reflex irritation from the unemptied colon, and this is relieved by clearing this part of the intestines. Rest of the stomach and intestines will also remove the tendency to vomiting.

There may be delirium from:

1. The belladonna;
2. coal-tar drugs which are sometimes used;
3. exhaustion: this appears usually in the evening or at night, and it may be an effect of the excessive depletion by catharsis;
4. autointoxication when the colon has not been emptied. Delirium is rare in well-handled cases.

The pains in the arms and legs, which are likely to occur during convalescence, are relieved by massage, hot applications, electricity, and the various analgesics. The nervousness and insomnia of convalescence may be removed by massage, sedatives, hydrotherapy, and so on.

Dr. Bishop says he finds at least half the patients he treats remain abstinent from morphine afterward. Allbutt said he gets better results in reclaiming morphinists than alcoholics.

After the physical craving for the drug has been removed, the subsequent treatment is moral, and is exactly the same as that described for alcoholics in Chapters IX and X above. For a few months after the medical treatment the patient should if possible be kept from severe mental or physical strain. There may be somewhat periodic recurrences

of a desire for morphine, and these are to be guarded against. Physicians or those that handle the drug are especially liable to relapse. Lambert knew a physician to go back to the vice after eleven years of abstinence owing to one injection of morphine, given to him to relieve the pain of pleurisy and despite his own protest.

Cocainism apparently is replacing morphinism especially among criminals and of the two cocaineism is the more destructive to mind and body, and the harder to put aside. The morphinist commonly wishes to be relieved from the slavery to morphine, the cocaineist does not care whether he is relieved or not.

Cocaine was isolated from the leaves of the coca plant (*erythroxylon coca*) by Gardeka in 1855, and he called it Erythroxylene. Neumann, who gave fuller information of it, named it Cocaine. The preparation used in medicine and by the cocaineists is a hydrochlorate of the alkaloid. Koller, in 1884 discovered its local anæsthetic power. The coca shrub is from five to eight feet in height, and it apparently originated on the eastern slope of the Andes in Peru. It was under cultivation and extensively used by the Peruvians when the Spaniards first discovered their country. Nicholas Monardes, a Spanish phy-

sician, described in 1565 the use of the coca leaves by the Peruvians. As it was employed by these people in their religious worship, the Church in Lima in 1569 forbade its use. The Peruvian and Bolivian Indians still chew the leaves, and are then capable of long physical exertion. A fluid extract or cordial is also used in South America.

Cocainism as a vice may be in part a result of taking the drug to overcome nervousness and exhaustion after alcoholic or sexual debauchery. It is found also in quack nostrums, in snuffs for hay fever, and so on. The drug is used by hypodermic injection in relatively few cases, but commonly as snuff. Sometimes it is rubbed into the gums, or a solution is snuffed. Dr. W. D. Owens of the United States Navy says¹ he found that those who use cocaine by snuffing often have an inflammation of the mucous membrane on the septum of the nostrils. There is originally a small papule on this part of the nose, which spreads; the centre becomes gray or opalescent, and the edges have a defined irregular margin. In one case there was necrosis of the septum. There may be nose-bleed. This ulcer suggests the use of the drug, which is usually concealed.

When cocaine is first used exhilaration and

¹*Journal of the American Medical Association*, 68:5.

increased mental and physical vigor are results. When the effect of the drug wears off the patient grows morose, irritable, easily excited, suspicious; there is insomnia and vague anxiety. The periods of exhilaration decrease in duration and frequency. Hallucinations of voices come on; there are delusions of persecution and fear of bodily injury. Insomnia becomes very troublesome, and with it appear marked irregular muscular spasms as in chorea major. The patient is garrulous, and the speech is likely to be an uninterrupted flow of disconnected thoughts: they forget the first part of the sentence before they reach the end. Many cocaineists are continually writing letters, which are as crazy as their speech. Hallucinations of sight and hearing develop; they see suspicious persons watching them, and they begin to carry revolvers and knives for protection: they may try to kill supposed persecutors or to commit suicide.

The appetite for food fails, they grow anaemic and lose weight rapidly; they appear sleepy and tired; the skin is pale and flaccid; the senses of hearing, sight, and smell are impaired. Some patients feel vermin crawling on them. They may feel "cocaine bugs" under the skin, which they try to kill by sticking pins through the skin. The sensation of for-

eign bodies *under* the skin is found in cocaineism and rarely in delirium tremens, and is diagnostic. The insanity may resemble alcoholic delusional insanity, and as in alcoholic insanity groundless suspicions of conjugal infidelity are frequent. The cocaine insanity commonly disappears if the drug is withdrawn, but it may remain for months.

It may be difficult to diagnose cocaineism in the early stages. The cocaineist is inclined to secretive solitude, the alcoholic is not. The morphinist does not have the delusions of persecution. Not seldom a patient takes cocaine, alcohol, and morphine together.

In the early stages of cocaineism it is easier to cure the vice than to get rid of morphinism or alcoholism, but in the late stages it is extremely difficult to do anything with a cocaineist unless he is locked up.

In the elimination treatment if the patient has been using both cocaine and morphine, the cocaine is reduced to complete withdrawal first, and then the morphine craving is attacked. Sometimes all the cocaine can be withdrawn at once, again it must be reduced gradually as in the morphine treatment. Valerian, hyoscyamus, and vegetable narcotics may be used to quiet the irritability and other distressing symptoms. Lambert says the

bromides are useful in large doses for a short period; and for symptoms of collapse, camphor, strychnine, and caffeine. Chloral, alcohol, morphine, or opium should not be used. Catharsis by castor oil, a half ounce to an ounce three times a day may be used, but it would be well to use the belladonna and catharsis treatment as in morphinism. The insomnia should be treated with food and prolonged warm baths.

There are addictions to chloral, paraldehyde, the bromides, sulphonal, veronal, and chloroform. Chloral is a very dangerous drug. There is no tolerance acquired by its use, and death from a slight overdose is likely to occur.

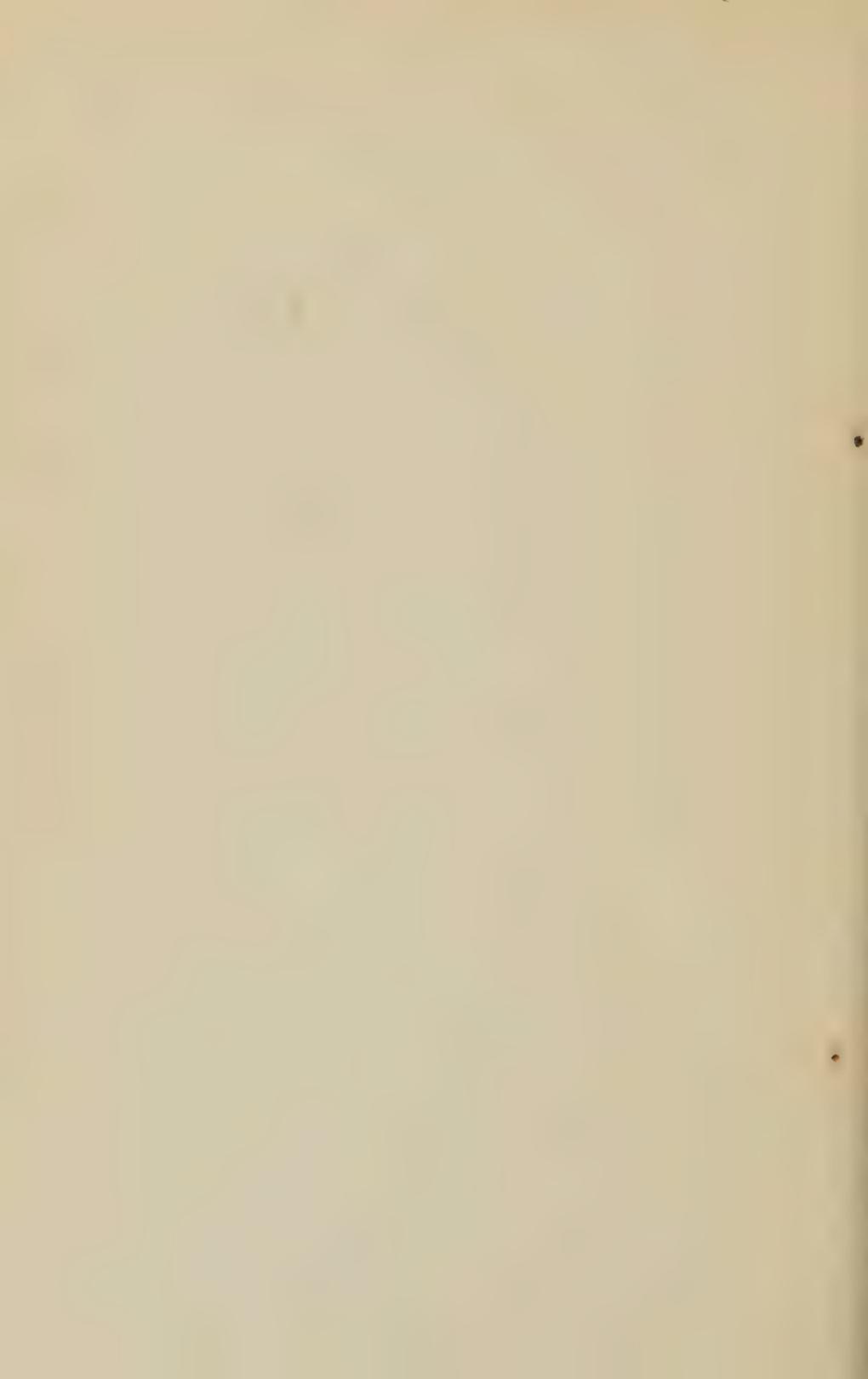
Drunkenness from ether was common a few years ago in the north of Ireland, and drunkenness from gasolene is not seldom seen in the United States. Of late the government has forbidden the indiscriminate sale of ether in Ireland, but this vice is not dying out. One Dublin dealer sends yearly to Belfast 200,000 hectolitres of ether. Less than a wineglassful of ether will cause drunkenness in one not accustomed to its use. The special temptation is that the drunkenness passes off without leaving a headache, nausea, and similar consequences as in alcoholic drunkenness—in the

late stages, however, the symptoms are worse than those of alcoholism.

Those drunk with ether shout, dance, laugh, act like maniacs. If the dose is large they may fall into convulsions, and foam at the mouth. They recover with relative quickness, feel depressed, and drink again. The drug creates a strong craving. Soon profuse salivation follows the drinking, and violent eructations. The face flushes and may grow livid. Then come pallor, weakness, and burning epigastric pain. Ether drunkards are commonly very quarrelsome. When ether and whiskey are mixed the most maniacal form of drunkenness is a result. The drunkenness from ether alone lasts about two hours. Sometimes sudden death takes place in this kind of intoxication.

Chronic gastritis and dyspepsia are consequences. The ether drinker is weak, nervous, has tremor especially of the forearm and neck, irregular heart-action, a whitish sallow complexion, and sometimes a livid cyanotic face. Fat and muscle waste, the circulation is feeble, the reflexes are exaggerated, and there is a profound degeneration of the moral character. These drunkards become hysterical, they lose all self-respect, and they lie and steal to get the drug.

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